Rock Products

DEVOTED TO

Concrete and Manufactured Building Materials

Vol. IX. CHICAGO, ILL., OCTOBER 22, 1909. NO. 4.

SPECIAL FEATURES IN THIS NUMBER

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Volume IX. CHICAGO, ILL., OCTOBER 22, 1909. Number 4.

THE NEW COOK COUNTY POOR FARM

Fire Damage Eliminated by the Use of Concrete Construction Exclusively in one of the Largest Public Charity Institutions of the Land.

One of the largest public works of construction in this part of the country includes the erection of the new buildings for the Cook county (Ill.) poor farm, which are rapidly nearing completion. This project has been before the Cook county commissioners for a number of years, as the facilities for housing the inmates at Dunning have, for a long time, been inadequate. It has been necessary to build at various places and the county institutions are badly scattered at the present time.

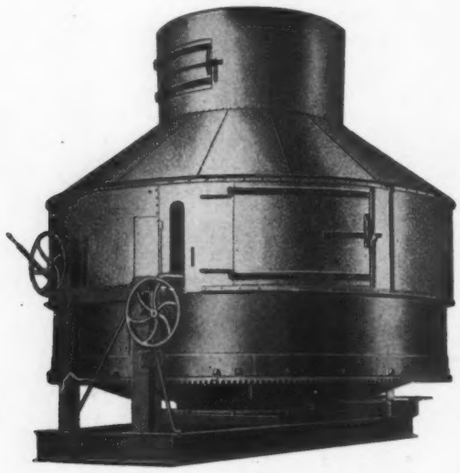
With this in view, the present county board conceived the idea of assembling the various departments and establishing them at one place, conveniently located to the city of Chicago. The site selected is at Oak Forest, about fifteen miles south of Chicago, on the C., R. I. & P. railway. It is well named, for the site is a veritable forest of oaks. It is a beautiful place and the plans are to make it an ideal location for such an institution. It comprises 289 acres and twenty-one buildings are to compose this institution. There are a number of features in connection with the work, one of which is the design, general plan and layout of the buildings. These now form a Maltese cross, with the administration building in the center.

Plans for the buildings were prepared by Architects Holabird & Roche, of Chicago. The general contract was awarded to the Alling Construction Co., of Chicago, and Van Wagener Alling, president of the company, has given the work his personal supervision. In this he has been assisted by G. P. Clayson, engineer of the company, a young man of marked ability. There are thirty subcontractors on the job. The total cost of the present work will be $1,257,018.

An interesting feature is the large amount of concrete which is being used. Each building has reinforced concrete foundation, walls and floors. This contract was awarded to the Forbes-Hotchkiss Co., of Chicago. The work is under the supervision of William S. Hotchkiss. The creditable showing made by Mr. Hotchkiss as a superintending contractor is especially worthy of mention. Observation of his work indicates the thoroughness of it and the fact that it

(Continued on page 38.)

GENERAL VIEW OF THE COOK COUNTY POOR FARM BUILDINGS UNDER CONSTRUCTION.



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DULUTH, MINN.

ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

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THE FRANCIS PUBLISHING COMPANY

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Communications on subjects of interest to any branch of the stone industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago.

Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....$1.00

In the Dominion of Canada and all Countries in the Postal Union..... 1.50

Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.

Advertising rates furnished on application.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

If you read every advertisement in ROCK PRODUCTS from cover to cover the returns in profits to you will net you $1 per ad.

This is a good time for the moss-backs to rub the moss off and do a little advertising. Perhaps some new customer will discover they are in existence.

The local association plan in the larger cities recently inaugurated by the National Builders' Supply Association is reported to be working very satisfactorily.

Don't allow yourself to be suspicious of your neighbor. It is easy to make an imaginary mountain of fancy out of a mole hill of fact. Sour faces never attract business, anyway.

Sewer pipe and brick as usual have yielded profits this year to all except the producers thereof. If there is any good reason why these manufacturers should be afraid of their shadows, what is it?

Reinforcement for concrete work has been standardized to a very great extent. Flexible wire fabric and fabricated girder frames with interchangeable parts have taken the place of most of the erstwhile fads and fancies.

Always call your customer's attention to your line of specialties, Mr. Dealer. He will not only appreciate your attention, but will form the opinion that you are an up-to-date man in your line. Besides you get the profit on the sales.

Portland cement is having a grand inning at the end of what has been for the most part a very unsatisfactory season. There has been a tremendous amount of cement used in 1909. But this must not be interpreted to mean that every county can support a cement mill, and sometimes two or three.

Now, just a word about collections. As the season draws to a close pay up all those little bills so as to have a clean slate without annoyance to go systematically after those big accounts that have your capital stock involved, to a greater or lesser extent. The man who keeps paid up and collected up is the man who rolls up a fortune.

February, 1910, will see in Chicago a grand national conclave of building material men and construction experts of every branch of the building industry. All readers of ROCK PRODUCTS are expected to visit the Third Annual Cement Show and participate in the proceedings of that special convention to which they severally belong. Practically every midwinter convention will be held in Chicago at that time.

In the closing rush of the season, which has been an exceptionally good one, the supply man is realizing how much more business could have been done if there had been no hesitation and misgivings about the tariff agitation that was going on in Congress in the spring. After all what does the tariff amount to in the building business? Our politics are altogether too expensive, for besides paying the piper which is inevitable, we seem to be compelled to give our undivided attention to the political program while it is in progress.

The manufacturers of concrete blocks who have learned the business from end to end find it a good vocation with very satisfactory profits. If it were not for the irresponsible and consequently unreliable block maker the field would be one of the best, and large enterprises could be built up. There is another feature that has always been a source of trouble—too little attention has been given to the securing of an adequate supply of the right kind of aggregate materials. Early in the history of the industry ROCK PRODUCTS called attention repeatedly to these things and they are quite as patent today.

Plaster contractors are full of business and repeat that time honored October wail, "There are not half enough good plasterers to be found." Now this provokes a repetition of our suggestion that there is a first-class opportunity for some well qualified man to start a school for the teaching of the plastering business to ambitious young men in this coming branch of applied science. Without question the next great advance step in building technique will come through a wider application of the plasterer's craft. Here is one big opportunity ripe for the picking. The study of plastic materials and their practical uses is one of the greatest importance, and the results to be achieved in the way of profits are really greater than all they tell about Alladin's lamp. Think of this.

What is more forceful than the old English adage, "An ounce of prevention is worth more than a pound of cure"? The cities and towns of this country spend hundreds of millions of dollars annually for the purpose of putting out fires, and this was in times past the only known remedy against fire losses. The prevention of the possibility of a fire can be much more cheaply provided by merely choosing all the materials of construction from such as cannot be made to burn. It is high time that the two greatest items of national expense be taken in hand so that the money can be diverted to some useful purpose. Fires entail an annual loss of hundreds of millions of dollars. The maintenance of fire fighting apparatus and insurance premiums amount to twice as much additional. The loss of human lives in fires in the United States in a single year amounts to quite the total of any life sacrificed in any modern war. Think of it.

The coming deep waterways convention at New Orleans on October 30 to November 2, is an occasion of first importance to the future business development of the United States. Besides this it is especially interesting to the producers and handlers of cement, sand, gravel, crushed rock and the equipment builders, as well as the heavy contracting contingent. The American commissioners who have recently studied the achievements in waterway improvements in Europe will be on hand, full of enthusiasm and practical ideas. President Taft, himself an Ohio river man, can be depended upon to take the lead in the movement to "get busy now." The great improvement must come before any further commercial expansion can take place. With constantly increasing population the situation is becoming more acute year by year. The time has come for action. Such work requires a long time for the physical undertaking, and the needed improvement will throw the country into a deplorable state a decade hence, unless a beginning is made very soon. The organization of a company to operate a steel barge line upon the Mississippi and its tributaries is a step in the right direction. This and all similar enterprises can be made to pay big returns with the right kind of terminal accommodations at the various ports and landings. Let's take a practical view of this great proposition.

EDITORIAL CHAT

The great successes in the world of commerce almost invariably have the sense of recognition and reminiscence developed to a high degree. In some way this higher sociological attainment is a part of the absorbed or accumulated education of the business man which gives him a powerful grasp with his own personality upon that of others. Instant recognition of the men one meets day by day somehow has an effect akin to magnetism. Recently A. F. Gerstell, of the Alpha Portland Cement Co., and Frank S. Wright, of the Meacham & Wright Co., chanced to meet in the smoker of a Pullman car. The instant they were seated, a mutual recognition occurred. They bantered one another about the amount of gray now mixed in their ambrosial locks, and to the minutest detail recalled the incidents of their last meeting almost fifteen years before. These kind of things amount to an asset that too many people overlook, and it is often the man who forgets people and incidents like this one who fail to see all of their opportunities.

Chas. C. Kritzer, the well-known lime hydrating expert, at Chicago, takes no little pride in his long list of perfectly satisfied customers. Such is the crown of success. His work in perfecting the process to secure a technically correct hydrate of the high calcium type upon a commercial basis is one of the biggest industrial achievements of this age of progress.

Lew V. Thayer, the well-known cement machinery man of Minneapolis, was last heard from in Mexico City, where he went to install a big order of his Peerless brick machines. En route to Mexico he took in the Oklahoma state fair, and as usual took a number of Peerless orders. While he makes no mention of it, we suspect that he intends to continue his journey into the canal zone, and if he does they will soon be using Peerless brick all over the isthmus.

John G. Evans, representative of the Atlas Portland Cement Co., came in from the Illinois state fair at Springfield with a copy of "Concrete on the Farm" in his hand. He said: "The fair was a very pleasant occasion. The Atlas exhibit was in charge of Mr. Palmer and J. Dan Heck. C. R. Brigham and myself were kept busy handing out these books. It is fun, for the farmers are surely glad to get them, and they make them buy cement, too."

E. E. Jackson, of 405 Jackson street, Fremont, Ohio, is well known in Sandusky county as having laid the first concrete sidewalk in Fremont, and he also constructed the first concrete bridge in the county. He is a prominent contractor for heavy construction work, railroad bridges, county bridges, foundations, sidewalks and structural steel. Mr. Jackson is one of the oldest contractors in the county and has done a large share of the important construction work in and around Fremont.

Edward W. Dunton, secretary of the American Well Works, Aurora, Ill., says that business this year, month by month, has been double that of last year. They expect this year to exceed the volume of business of 1907, which was the biggest year the company had during its existence since 1868. This company manufactures the American drilling machines for deep blast hole-drilling in quarries, and the marked increased demand for them indicates much greater activity over that of last year in this field of industry.

One of ROCK PRODUCTS' representatives called at the Kansas City office of the Union Sand & Material Co. and found A. Baumberger loaded with work. He said the mill was rushed with orders and they were shipping day and night. They have just landed a contract for 10,000 barrels to be used for concrete work in and about the Leavenworth, Kansas, prison and on Fort Leavenworth. They have also sold a large quantity of cement to the Kansas City Southern Railroad for improvements along the line.

We met Charles L. Johnson in Kansas City the other day. Mr. Johnson is now an enthusiastic westerner. He thinks the future of the cement industry in the Southwest has a brighter outlook than in any other part of the country. He is kept busy these days and is selling lots of Cowboy brand cement.

Dr. Charles B. Dudley, of Altoona, Pa., president of the American Society for Testing Materials, has been honored by election to the presidency of the International Association for Testing Materials, the most eminent distinction that can be achieved by a scientist. As the leader of the American branch of the International Association, Dr. Dudley has well earned his laurels. The next congress of the association will be held in the United States.

George H. Keyes, Louisville, Ky., representative of the Ætna Powder Co., of Chicago, says that there is great activity in the crushed rock quarries of his territory. He has recently gone over the whole route and found every crusher and all of the lime burning plants running to capacity.

F. H. Angell, the pulverizing expert of the Jeffrey Manufacturing Co., Columbus, Ohio, spent a few hours in Chicago this week. As an incident thereto he added a few to his long list of orders for that famous swing hammer pulverizer which he is always talking about.

President Taft is descending the Mississippi for the purpose of attending the deep waterway convention at New Orleans on October 30 to November 2. He is pledged to give his best efforts to the great national improvement of the future, and has long been a

JOHN G. EVANS, ILLINOIS REPRESENTATIVE OF THE ATLAS PORTLAND CEMENT COMPANY.

firm believer in the principle of waterways for the free use of all the people. It is time to get busy with the actual work of the improvement. Let that at New Orleans be the last meeting until the work is started. Every delegate should feel his responsibility to insist upon immediate action.

A. A. Pauly, of Youngstown, Ohio, famous in the concrete industry by reason of his structural tile inventions, visited Chicago friends recently. He is naturally proud of the wonderful success his invention has achieved in the building material markets. The tile-making plant of his own company at Youngstown is being rebuilt, in order to introduce economies in handling the materials, which improvements have been developed by practice. Incidentally, the new plant will have an increased capacity, so as to be in a position to turn out from 1,500,000 to 2,000,000 tile next season.

"They are always sold by the time they are ready for delivery," Mr. Pauly says. He reports new plants going into operation at Havana, Cuba; in Buenos Ayres, and in northern New York state. Besides this both the New York city company and the San Francisco company are ordering additional equipment to increase their capacities, and everybody in the tile business is enthusiastic over their success. Chicago will go some as soon as the well balanced start is made.

FIRST MURDERER'S DEFENSE.

It is Criminal These Days to Use Combustible Materials in Residence Properties.

Loss of human life by reason of fires in a single year in this enlightened country of ours in this progressive XX century amounts to more than the total destruction of life in all the battles of the wars of modern times. Is this not a matter of sufficient importance for the public schools to promulgate to the rising generation, for public officials, those guardians of the unthinking masses, to take in hand and apply the remedy?

Hundreds of millions of dollars in property annually destroyed by fire, together with the sum total of the cost of maintaining fire apparatus and sustaining insurance policies, amount to a direct tax upon the wealth-producing power of the country. If used in the tearing out and rebuilding of that class of structures which are known to be fire-traps, such a sum would, in a few years, replace practically all of them with fireproof structures, saving the property, conserving the accumulation of greater wealth, and eliminating the constant danger to human life.

As a matter of course, in this age of commercialism, that which appeals to the purse is first to set influences in motion to accomplish things. Here is plenty of monetary consideration to excite the greatest activity, and the means for securing the desired end are not only available but are actually being thrust upon the attention of all those who are most responsible.

The great practical brains of capable engineers working along original ideas in the concrete industry have developed well-defined systems and intelligent practices for the erection of every possible kind of structure wholly of materials which cannot be made to burn; and further, in every case at prices which are no higher than those of the flimsy, inflammable, dangerous and criminal types of construction that have prevailed in the past.

A few years ago there was excuse for the construction of combustible materials in every type of buildings, including the one most important of all—the human habitation—because nothing better was known, nothing safer had been discovered, and the established ideas of ages remained undisturbed. This, however, can no longer be introduced in the pleadings of the architect who advises the builder to jeopardize human life in this way, when he knows full well, if he will but give attention to the full information which is freely offered him, that no such course is necessary or advisable.

The time is not far distant, when the knowledge of these things will be so well planted in the public mind, that the infinite court of last resort which we term public opinion, will hail to the bar of justice on criminal charges those professional men who are the custodians of the public safety by reason of their technical knowledge in matters relating to building construction. That the concrete industry has attained the complete solution of the elimination of fire danger and fire damage, we as the champion of that industry are at all times prepared to show. Not by one route or by one man's method or system, but in a number of ways for each particular type of construction, can the concrete industry today demonstrate that fire losses are no longer a necessity, and that to willfully endanger human life is not short of a crime.

Great Fire at Dayton, O.

Of course, it is impossible, in the space allotted to recount all of the thousands of fires which destroy immense amounts of property and ruthlessly sacrifice human lives.

Only yesterday, the city of Dayton, O., was swept with a mighty conflagration. In a few hours property losses rolling up into the millions were suffered. The burned area is located in the manufacturing and shipping district of the city. A number of wealthy corporations lost their plants and the Big Four railroad freight depot went up in smoke. Deprivation and hardship to the thousands of employees who obtained their livelihood in the demolished manufacturing plants is quite as great a loss in actual wealth not produced as the schedule which will be drawn up by the learned and able insurance adjusters, and the proprietors of the corporations involved. In the freight depot there was naturally many thousand tons of merchandise, a great deal of it uninsured and the property of people who can ill afford to stand such a loss, and for which there is no reparation.

The question arises, will the Big Four Railroad rebuild its freight depot of combustible materials; will the manufacturers rebuild their factories and warehouses so as to invite another commercial catastrophe; or, will they be sane enough, and will their advisers

be honest enough, to rebuild them according to the development of modern intelligence? Doubtless new plants will be erected by the Dayton Computing Scale Co., the Pasteur-Chamberland Filter Co., the Cooper Medicine Co., the Dayton Steam Boiler Co. and the Bimm Storage Co., and it will be observed with interest which and how many of them will be correctly advised or are sufficiently intelligent to secure for the future perfectly safe construction.

Another Wooden Home Disaster.

On the night of September 26, a fire occurred at Millvale, a suburb of Pittsburg, Pa., in which three little children, aged respectively six, eight and ten years, the family of John Lang, a stationary engineer, lost their lives. An insignificant gas explosion occurred in a double frame tenement which instantly set fire to all parts of the flimsy combustible shell. In fifteen minutes the entire structure was burned to the ground, and firemen and neighbors were seeking amongst the embers for the charred bodies of the children whose lives were wiped out whilst the father was at his work. Five other people, who were asleep in the building at the time of the fire, succeeded in making their escape. Among these was the mother of the unfortunate children, who has since lost her mind, being crazed with grief because she saw her little ones struggle to the window in their efforts to escape, then became enveloped in the flames as the flimsy burning floors and walls caved in upon them.

The Oklahoma Geological Survey.

Oklahoma is a state that has not overlooked its mineral or natural resources, and in the development of these it sets an example to the other states which might well be followed. When that state was admitted to the Union, definite steps were taken to establish a geological survey department and in providing for this work, the legislature incorporated in the constitution an act establishing this as one of the departments of the state.

Professor Charles N. Gould has been connected with survey work in both the Indian and Oklahoma territories for a number of years, and he was appointed head of the Oklahoma Geological Survey when it was organized in June, 1908. L. L. Hutchison was appointed assistant director of the survey department, as he had many years' experience in field work and corresponding lines in the mineral resources of the state. The offices of the department are at Norman, Okla., in connection with the state university.

At the recent state fair, held at Oklahoma City, the department had an exhibit, which was by all means one of the most interesting of state exhibits. Last year, at the state fair the exhibit was given small space and consideration, but this year it had grown to such gigantic proportions that it occupied about six times as much space in one of the main buildings, and it included the exhibit of minerals found in various parts of the state. Prof. Gould and Mr. Hutchison were both in charge of the exhibit during the state fair, assisted by students of the geological department of the university. They made a very interesting display to good advantage and were very careful to give accurate information to their visitors about the minerals displayed. They had, besides the stones, including granite and marble, a splendid exhibit of clays. The department has been conducting a series of tests on Oklahoma clay in the U. S. Geological Department laboratory at Pittsburg, and these, with the results, were on exhibition. Samples of crushed rock from Crusher, Okla., were shown. The exhibit of sand consisted of glass sand from Murray, Durant and Dougherty counties. Gypsum in its various forms was exhibited, as well as selenite and gypsite from El Dorado, Watonga, Okarche and Bickford. There were a number of specimens of asphalt, including sand, shale and rock asphalt from various quarries. Besides these products, cement rock, limestone and shale which is used in the cement plants of the state were on exhibition. Other exhibits included products of zinc, lead, oil and coal. Each exhibit was carefully labeled and the visitor found it was very easy to secure information.

The Oklahoma survey is in the hands of competent men, well qualified to handle the work of the department. Not only are they qualified but they are ready to give any information regarding the products of the state, and their knowledge is at the service of anyone who desires it. They have unselfishly given much valuable information and time to the development of the resources. The organization of this department is probably the best in the geological survey department in the country with the exception of that of the U. S. Geological Department. This important work is appreciated and given the consideration that it should receive by the legislature of the state. As the constitution provides for this department it is conducted, not as a political scheme, but as part of the work vitally necessary for the development of the state. It requires competent men in charge of the survey and the legislature has made a liberal appropriation to carry on the work. They would rather see how much money can be judiciously expended in this way than to save and not have a perfect organization. Other states will do well to follow the example set by Oklahoma, and establish such survey departments.

FINE DISPLAY OF OKLAHOMA'S RESOURCES AT THE STATE FAIR.

It is stated that the insurance adjusters settled the fire loss to the satisfaction of the owner at something like $1,600, but who shall measure the loss to honest John Lang, a worthy and useful citizen of Pennsylvania, or his poor demented wife?

How shall the state of Pennsylvania, the county of Allegheny, or the Federal government, find an excuse for allowing conditions to exist that do not give adequate protection to the producers in the world's beehive of workers? Who can estimate the value of those three little lives which were blotted out, and who dares to say that this is a free country when such infants cannot find adequate protection from the public authorities who cheerfully spend the peoples' millions for every significant as well as important convenience? Here is the suggestion of a public necessity, and it is high time that those charged with the public safety should take cognizance and action in this most important matter.

The first crime of record was insufficiently answered by the criminal in the words, "Am I my brother's keeper"? Yea, verily, that was the earliest direct lesson of the Deity to man as our records show, and those who have not learned this first lesson are not fit for public employment, for elevation to places of public trust, and especially unfit are they to be the custodians of the safety of the lives, the property and the future of our people. Think of it.

L. H. Weideman, of the Waterloo Cement Machinery Corporation, writes us that the "Polygon takes the blue ribbon for the best batch concrete mixer at the Oklahoma cement show."

Albert Moyer, Assoc. Am. Soc. C. E., sales manager of the Vulcanite Portland Cement Co., Philadelphia, Pa., has issued the following concise suggestions for the proper proportioning of crushed rock for concrete:

A saving in cement and sand may be effected and a much denser concrete obtained if 2 or 3 sizes of crushed stone are used, properly proportioned and mixed together. A simple method is as follows:

Supposing you have two sizes of stone; one passing a 1½-inch ring, the other passing a ¾-inch mesh. Screen the ¾-inch stone, taking out all that will pass through a ¼-inch mesh, figuring that which is screened out as sand. Make a receptacle which will hold approximately 4 cu. ft., a piece of 15-inch sewer pipe will do. Measure 2 cu. ft. of the smaller stone and 2 cu. ft. of the larger stone, mix them well together with a shovel and place in the receptacle, mark on receptacle on the side the heighth to which the stone rises.

Empty the receptacle and again measure out 2½ cu. ft. of the larger stone and 1½ cu. ft. of the smaller stone. Mix together as before, place in the receptacle and note on the side the heighth to which the stone rises. Experiment in this manner varying the proportion of the larger and smaller stones, always adhering to the total quantity of 4 cu. ft. The mixture which gives the least volume in the receptacle will make the densest concrete, and require the least amount of sand and cement. "Maximum density is maximum strength."

The Monarch Portland Cement Co. has established a sales office at 208 Arlington building, Kansas City, Mo. W. H. Rhodes is the manager of this office.

The works of the Savage Mountain Fire Brick Works, Frostburg, Md., will be enlarged. They are now shipping from twelve to fifteen cars per week.

C. B. Reinhardt, sales manager of the Globe Plaster Co., Buffalo, N. Y., has recently acquired the possession of a new automobile for use in his business. He is surely making good and with this time saver sales for the Globe Plaster Co. ought to increase perceptibly.

A ROCK PRODUCTS man had a very pleasant visit with D. Binns, president of the Premier Clay Products Co., of Kansas City. Mr. Binns says the plant at Oskaloosa is turning out brick which have a ready sale. They are building additional kilns to increase the capacity.

H. P. Harter, Oklahoma City sales agent for the Oklahoma Portland Cement Co., is supplying "O. K." cement on many of the large concrete jobs in that growing city. One building just completed, which used this brand, is the Oklahoman's new office building on Broadway.

Clark A. Burgess, funny man of the Ingersoll-Rand Co., Cleveland, Ohio, blew into town the other day with a bunch of orders in each pocket for compressors, drills, and other things which are his specialty these days. Quarrymen in the central west no doubt look longingly for Burgess to call, so we ordered him out of town.

W. L. Loveland, of the Allis-Chalmers Co., with which he has been associated for the past nineteen years and, since 1904, manager of their mining machinery department, has accepted a position with the Mine & Smelter Supply Co. as general manager. Mr. H. C. Holthoff, for many years identified with the mining branch of the Allis-Chalmers Co., and for the past two years manager of the Mexico office, will succeed Mr. Loveland as manager of the mining machinery department of the company and be located in Milwaukee.

Messrs. H. Dittlinger and N. V. Dittlinger, of New Braunfels, Texas, were recent Chicago visitors. They have purchased an outfit for a rock crushing plant to supplement the working of their lime quarry. Both of these gentlemen are enthusiastic over the successful introduction of "Snowdrift" hydrate of lime in the southwest. Mr. N. V. Dittlinger presented our collection with a sample piece of lime mortar which was made by the Franciscan friars in the year 1600 A. D., and used by them in building the Spanish mission near San Antonio, where long afterwards Fannen perished in the massacre. It is an excellent specimen of medieval mortar, practically a perfect calcium silicate.

FOR THE RETAILER

The National Builders' Supply Association

Meets Annually.

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James W. Wardrop, Pittsburg.....Secretary

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Illinois.....H. H. Halliday, Cairo
Iowa.....R. Hay, Dubuque
Kentucky.....Owen Tyler, Louisville
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South Carolina.....A. G. Gower, Greenville
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Official Organ, ROCK PRODUCTS

The eleventh annual convention of the National Builders' Supply Association will be held at Chicago, February 23-24, 1910, during the Cement Show. Make your plans now to attend the greatest gathering of building material men ever held.

The New Idea Effective.

Local, district and state branches of the National Builders' Supply Association, organized according to the needs of each particular case is the new policy that is proving effective and interesting to the handlers of supplies both great and small. Cooperation and not competition is the modern method of business building. There is a place where competition gets to be destructive, and not a healthy regulator of business activity. Competition is the method used by barbarians to measure their individualities, but co-operation is a development of civilization in which each man voluntarily becomes his brother's keeper in actual practice. It brings us nearer to the supreme desideratum of the universal brotherhood of man. Think this over. Give a little of your time, talent and effort to this great opportunity in your own affairs to do some good in the world among other things. If you love flowers, this is as sweet as roses in June after you have practiced it awhile.

The One Thousand Club.

Jas. W. Wardrop, secretary of the National Builders' Supply Association, has been carrying on an energetic campaign for new members and this is what he has to say regarding the work:

I am pleased with the result of my August letter, and the replies indicate that our vice presidents are not only interested but anxious to promote the welfare of the association. This is encouraging to me, and as we now enter the "home-stretch" for 1909, I earnestly trust that we shall all pull together for the "1000 Club," from now until February next.

My experience is that every dealer feels that cooperative effort is needed, and that he is willing to pay his share when that effort makes itself felt, but, aside from his broadness of mind and liberality of pocketbook, it must make itself felt in HIS business. This may be the selfish view. It is human nature just the same, and it is human nature that we are dealing with, and we are all guilty.

To bring it home to every dealer the executive committee has introduced the local organization idea and is now spending time and money to make the National Association work felt in every community.—Worcester, Mass., is organized and reports "it is working first class."—Chicago, Ill., organized in August and reports "Good progress for the month and bright outlook."—Indianapolis organized September 3rd and reports "It is the best thing we ever undertook."—Philadelphia is organized and "finds it worth more than it costs."—Pittsburg is organized and "would not go back to 'old' conditions for anything."—Baltimore is organized and "finds life worth while."—New Jersey is organized and finds it so beneficial that they "want every community to profit by their experience, going so far as to do personal work in the New England states."—Columbus and Cincinnati, Ohio, are organized and are a power in their state.—Illinois is organized and doing good work for the dealers.—Erie, Pa., is organized for past two years and "heartily indorses the idea and the benefit."—Champaign, Ill., dealers get together and "find the plan a very good one."—Indiana, Wisconsin, Minnesota, Connecticut, Massachusetts and the Greater New York, while now organized, are given new inspiration by the experiences elsewhere and promise soon to report "new life" and "better conditions"—while St. Paul, New Orleans, Terre Haute, Dayton, the state of Michigan, the state of Arkansas, and Aurora, Ill., are ready for the introduction and patiently await the assistance the National Association is able and willing to give.

Production of Sand and Gravel.

The production of sand and gravel in the United States in 1908, as reported to the United States Geological Survey, was 37,216,044 short tons, valued at $13,270,032, a decrease of 4,635,874 tons in quantity and of $1,222,037 in value from the figures for 1907. Pennsylvania was the leading state in value, followed by Illinois, New York and Ohio. The ordinary price of sand and gravel ranges from 8 cents to $1.50 a ton, the difference being mainly due to the variety of treatment to which the material is subjected after being excavated. Gravel for roofing or other special purposes may be valued as high as $3 a ton and some special kinds of glass sand bring from $7 to $20 a ton.

The production and value of the various grades are shown in the following table:

Sand and Gravel Produced in the United States in 1908.

	Quantity (short tons).	Value.
Glass sand	1,093,533	$ 1,134,599
Molding sand	1,980,677	1,342,802
Building sand	16,037,681	5,635,538
Fire sand	121,678	107,858
Engine sand	573,894	219,486
Furnace sand	339,523	190,023
Other sand	4,340,034	944,030
Gravel	12,729,004	3,695,696
	37,216,044	$13,270,032

These and other statistics are contained in a paper on glass sand, etc., published as an advance chapter from "Mineral Resources of the United States, Calendar Year 1908." This paper may be had on application to the Director of the Geological Survey, Washington, D. C.

Will Be a City of Concrete.

CHICAGO, ILL., Oct. 17.—The city of Argo is located on the drainage canal, twelve miles southwest of the City Hall. Here the Corn Products Company, a subsidiary company of the Standard Oil Company, is building, at a cost of $15,000,000, a great plant to cover 124 acres of ground.

As there is an unlimited supply of stone, sand and gravel in Argo, concrete can be made there probably cheaper than at any other place in America, consequently all the Corn Products Company's buildings are to be of reinforced concrete. The company will offer employment to every worker in the family and will regularly employ about 6,000 men.

Sugar, syrup, glucose, starch, baking powder, corn oil and gluten feed are to be manufactured in Argo. The capacity of the first group of buildings, which are now almost completed, will be 300 carloads of corn daily. A part of the buildings will be completed and in full operation November 1.

Fall Trade Shows Marked Improvement.

A. R. Kuhlman, vice president of the Toledo Builders' Supply Co., says that there has been a most marked improvement in business since August, which has come to stay, and that next year building operations will far exceed those of this year. One of the principal reasons for this condition in building circles is that it is generally conceded that there is a tendency to a marked advance in prices in building materials all along the line.

Appleton Bridge Completed.

APPLETON, WIS., Oct. 10.—The Modern Engineering Co. has completed the work of building the Pacific street bridge. This is of reinforced concrete construction. Five thousand barrels of Owl cement were used. This cement was furnished to the contractor by the Appleton Lumber & Fuel Co.

The Riverside Sand & Gravel Co., Indianapolis, Ind., has been incorporated with a capital stock of $30,000. Incorporators, H. C. Huffstetter, J. R. Riley, A. M. Brown, J. R. Nugent, and Mary E. Huffstetter.

Builders' Exchange Outing.

PHILADELPHIA, Oct. 14.—Members of the Builders' Exchange enjoyed an automobile run to Valley Forge on the 5th inst. There were thirty-three cars in line and, with the exception of one or two tire blow-outs, the trip was highly successful. The party returned by way of Belmont, reaching the Belmont Mansion (where dinner was served) about 7 p. m. The members and their guests who participated were:

James J. Ryan.
John C. Atkinson.
Mr. Hazzard.
A. D. Keyser.
John R. Livezey.
H. A. Barber.
Richard Torpin.
John Barber.
Berry Bros.
Frank R. Whiteside.
John Atkinson.
R. O. Scheel.
W. S. Boyd.
S. B. Bowen.
Frank Pate.
James S. Talley.
R. Griffith.
William Conway & Son.
H. Leon Reeves.
Jacob L. Tyson.
H. S. Andrus.
Fred W. Fleck.
Christian E. White.
John Fleck.
Frank H. Reeves.
Cyrus Borgner.
Mark Reeves.
D. O. Boorse.
Hy. T. Saunders.
John H. Earley.
A. J. Carty.
John H. Holmes.
Charles E. Ehrenzeller.
William A. Kramer.
P. S. Smith.
William Collins.
Andrew Peoples.
Thomas F. Armstrong.
Charles J. Appleton.
John O'Donell.
Mr. Burns.
J. Herbert Schall.
A. R. Taylor.
Charles Gillingham.
Roger Atkinson.
H. M. Fetterolf.
A. Raymond Raff.
L. McNeill.
William Boyd.
A. G. Buringer.
Mr. Dickinson.
George Sinn.
Herman Voigt.
L. B. Mellor.
W. C. Ashenfelter.
Herman C. Kuehn.
J. H. Sheeler.
John C. Kase.
David Haire.
F. M. Harris, Jr.
Charles Elmer Smith.
[illegible] H. Barrett.
J. Hampton Moore.
A. S. Elshenbrower.
Edwin S. Clark.
Walter Gilbert.
M. D. Medary.

Among the guests was Mr. Fox, of Arkansas, who made a witty and well-received speech after the dinner.

King's Crown Plaster Company.

CEDAR RAPIDS, IOWA, Oct. 10.—The King's Crown Plaster Co. is one of the important factors in the builders' supply business of this city. It is, at the present time, building two seventy-five-yard barges which will be used for hauling sand. Operations in the past have been conducted by means of pumping the sand from the Cedar river on which the property is located. They are now obliged to go up the river about half a mile, and will pump the sand onto the barges. These will be hauled to the dock by a tow barge and a derrick with a grab bucket will unload them. The company has a sand lime brick plant with a capacity of 20,000 brick per day. These brick are sold mostly in and about the state. The lime used in this product comes from Maquoketa, Iowa. They also have a plaster mill with a capacity of forty tons per day, which manufactures wood fibre plaster. In handling builders' supplies, Owl cement is one of the principal products sold by them.

Woodville Lime & Cement Company.

Change of the old firm name of The Woodville White Lime Co. to that of the Woodville Lime & Cement Co. was made because of the growth of the business and the handling of all kinds of building material except hardware. The old firm name gave the impression that its business was confined to white lime. By next January it will be fully equipped to handle lumber at wholesale. It will buy all this lumber, so Mr. Urschel, its treasurer and manager, states, in the extreme southern states and will employ four active salesmen in this department.

The Port Byron Lime Association.

ROCK ISLAND, ILL., Oct. 10.—The Port Byron Lime Association have a yard at this place, for the distribution of retailers' supplies. The yard is located on the C., M. & St. P. railway and has direct connection with the lime kilns of the company, which are located at Port Byron and Cordova. Besides handling the product of their own manufacture, they deal in Atlas and Owl Portland cement and Plymouth plaster. Sewer pipe, they secure from various manufacturers in and about this district. Speaking of business, they say that building in Rock Island has been rather poor, though in Davenport and Moline, reports show that these cities have made considerable progress in the past year.

The Tiffany & Pickett Company, of Winchester, Conn., has been incorporated to deal in coal, lumber, brick, lime and building materials. Capital stock, $75,000. Dwight B. Tiffany and Frederick B. Pickett of Winsted and Alexander Plumley of Waterbury, are the incorporators.

BUILDING SUPPLY TRADE GOOD

Dealers in Ohio Especially Have Had a Satisfactory Season, and Report Orders Constantly Increasing.

Dealers in builders' supplies generally, and particularly those located in Ohio, are almost unanimous in the assertion that the season just closing has been a satisfactory one as regards volume of business. During the spring and early summer there was little apparent increase over last year, but toward the latter part of August a very perceptible improvement in trade was noticeable, and since then orders have been decidedly larger and more numerous. "We are now selling a great deal more of all kinds of building materials than we did last year at this time," is the statement almost universally made by the large number of dealers personally called upon by the representatives of ROCK PRODUCTS.

One interesting feature of this improvement in trade is to be found in the growing demand for cement and reinforcement steel and iron from farmers. These latter, amply supplied with funds from the sale of immense crops at liberal prices, are making extensive improvements on their farms, and a great part of this work is being done in concrete. New houses, barns and silos are to be seen on every hand, and the construction of smaller buildings in which lumber was formerly used almost exclusively is phenomenally large.

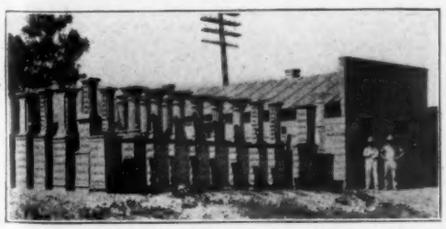
It is a most happy condition, and betokens a prosperous year ahead for the building supply industry.

LIMA.

It is said that of the number of cities in the oil belt Lima is the only one which did not suffer a reaction from the "boom oil period." It assuredly is a "live one," has all the airs of a metropolitan city, and its citizens have the go-ahead spirit which has prompted many public improvements in the way of paving streets, laying sewers and tearing down, remodeling and erecting modern business blocks. Dealers in builders' supplies here are among the most progressive in the state, have all been doing a good business this year and are as one in believing that the wave of prosperity has got to Lima. The farm districts near Lima are assured of great crops of corn, oats and wheat, and the country people are vying with those of the city in making improvements.

Cement Block & Coal Company.

The Cement Block & Coal Company is located on Atlantic avenue and the C. & E. R. R. and was established in 1906. It manufactures cement blocks and ornamental porch work, columns and piers. Its output this year has been nearly 75,000 blocks, principally used for foundations. J. W. Gorham stated that one-half of this output had been used in the city and the other half in the farm districts. The cement this company handled has nearly all been used in the manufacture of cement blocks. It is the intention of the managers to put in a full line of builders' supplies and they are now erecting a ware-



WATSON CEMENT & COAL CO., LIMA, O.

house which will have a storage capacity of 500 barrels of Atlas Portland cement, having used this brand for years. Its yard has a switch track running alongside and possesses excellent facilities for handling building material. The company does a contracting and building business in cement sidewalks, foundations and cisterns and has secured many contracts for this class of work.

Consumers' Fuel & Building Supply Company.

In 1903 the Consumers' Fuel & Building Supply Company was located on East Vine Street, next to railroads, and was established with Joel Spyker as president, A. Mullen vice president, C. C. Miller secretary and treasurer and J. W. Shanahan general manager. Three switch tracks run through the yard, one from the C., H. & D. and two from the C. & E. R. R., touching coal bins and warehouse which has a storage capacity of 3,500 barrels. There are no better facilities in Lima for receiving, shipping and handling builders' supplies than this company possesses. It carries Atlas and Universal cements; lime in bulk, barrel and hydrate from Ohio & Western Lime Company; plaster, the product of the United States Gypsum Company; sewer pipe and fittings, wall coping, flue lining, fire brick and fire clay from the American Sewer Pipe and Robinson Clay Product companies.

Mr. Shanahan says: "Our sales of cement to the farmer have been double what they were last year; we have furnished the bulk of the cement used for paving twelve to fifteen streets in Lima, and we have delivered for the paving of these streets two car loads of Universal cement a day for six weeks and the end is not yet. Of course our business has been good this year, and since last August it has been more than brisk. Prospects are more than bright."

Crider Cement Block & Coal Company.

The Crider Cement Block & Coal Company is located at 329 East Kibby Street. The company is composed of J. E. Crider president, M. L. Mayer vice president, H. A. Crider secretary and treasurer, and L. R. Crider manager. It manufactures cement blocks, cistern blocks, shingles, columns and flues. Its output of cement blocks this year has been nearly 65,000. It began manufacturing cement blocks only last February and they have been used for foundations principally, but people here are now commencing to use them for houses and business blocks.

A switch track from the C., H. & D. Railway runs alongside of the yard and warehouse, giving it the best of facilities for handling material. Lehigh and Ironton Portland cements are the principal brands carried; it also carries hydrate from the Woodville White Lime Company; the product of the American Cement Plaster Company, and sand from the Home Gardner Sand Company. Its warehouse storage capacity is 1,000 barrels of cement, lime and plaster.

Manager Crider reports business good this year, with very bright prospects ahead.

W. J. Firguson.

One of the busiest places in Lima is the warehouse and yard of W. J. Firguson on the C., H. & D. tracks. The office is at 314-316 East High Street. Mr. Firguson has lived in the county thirty-five years and been in this business here for fifteen years. He has excellent facilities for handling quickly and promptly delivering by team to all parts of the city, builders' supplies from his yard. He handles Castalia, Medusa and Alma Portland cements; lime in bulk, barrel and hydrate from the Kelly Island Lime & Transport Company; plaster, the product of the United States Gypsum Company; sewer pipe and fittings, flue lining, fire brick and fire clay from the American Sewer Pipe Company, and sand from the Devore Lake Sand & Gravel Company. Mr. Firguson has found a heavy increase in the demand for cement in the farm districts and business good this year with very bright prospects for the future.

Fidelity Coal & Supply Company.

The Fidelity Coal & Supply Company at 338 East High Street, has a switch track running into its main yard from the C., H. & D. Railway, and also a switch track running alongside its north yard from the L. E. & W. Railway. The warehouse capacity of both yards is 4,000 barrels of cement, lime and plaster. Both yards have splendid facilities for receiving and shipping materials, and the arrangement of driveways through each yard could not be more practical for handling economically and delivering promptly, building supplies.

Lehigh and Castalia Portland cements are handled here; lime in bulk and barrel from the Scioto Lime & Stone Company, and hydrate from the Woodville White Lime Company, the agency of which the Fidelity has for Lima; plaster of the American Gypsum Company's make, and sewer pipe and fittings, flue lining, fire brick, fire clay, etc., from the American Sewer Pipe Company. It also handles sand from the DoVille Lake & Sand Company, Toledo.

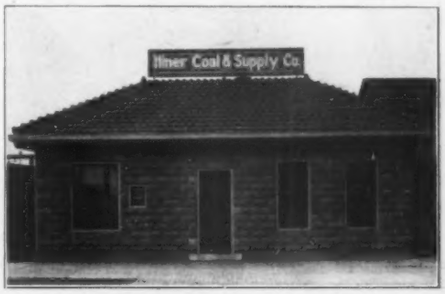
E. C. MacKenzie, manager, says: "Business has been fair this year so far, and promises of improvement during the remaining two months of the year are emphatic. The sales of cement in the farm districts are rapidly increasing every year. The farmer is just beginning to strike his gait."

Baechler Coal & Supply Company.

The Baechler Coal & Supply Company, located at the corner of Market and the C., H. & D. tracks, started in business six months ago, succeeding the Hiner Coal & Supply Company. A switch track from the C., H. & D. runs alongside the yard. This yard, with its driveways touching all points in it where material is stored, is admirably arranged for economical handling and delivery.

Diamond, Superior and Edison Portland cements are the principal brands handled; lime in bulk, barrel and hydrate from the Kelly Island Lime & Transport Company and the Ohio & Western Lime Company; plaster from the Michigan Plaster Company, and sewer pipe and fittings, wall coping, fire brick, fire clay, etc., from the Robinson Clay Product and Buckeye Clay Product companies.

The company also manufactures concrete pier blocks, columns, and ornamental porch work. Farmers



BAECHLER COAL & SUPPLY CO., LIMA, O.

take a large percentage of the concrete blocks, using them for foundations, and also use fully 40 per cent of the cement the company sells. E. C. Baechler, proprietor of this company, said: "I got into the business just at the right time, as the era of prosperity is now upon us."

Watson Cement & Coal Company.

Since its establishment ten years ago this concern, under the control of A. Watson, the proprietor, has prospered finely. It is located at 400 East Elm Street. A switch track from the C., H. & D. Railway runs into the yard and close to the warehouse, which has a storage capacity of 1,000 barrels of cement, lime and plaster. The facilities for receiving and handling these materials economically could not be better. Medusa Portland cement is the principal brand handled; hydrate from the Ohio & Western Lime Company and plaster from the Michigan Gypsum Company are also carried.

Mr. Watson manufactures cement blocks, his output being nearly 100,000 per annum; also ornamental cement work for porches, piers and columns. Twenty-five per cent of this output of cement blocks and also 25 per cent of the cement he sells, G. A. Seibold, the manager, says, is taken by the farmers around Lima. He further says that business has been fair this year, but since last August there had been a wonderful improvement.

SANDUSKY.

The people of Sandusky feel and act in a spirit which shows that the depression in business of two years ago has been shaken off. Factories are all running, men are employed full time and there has been a great deal of building done and public improvements made this year. Dealers in builders' supplies have had a fair year and believe they see bright prospects ahead. Crops in the farm districts contiguous to Sandusky are in every sense bumper ones, and the farmers are making extensive improvements on their farms, using cement in quantities unheard of in past years.

Hoffman Coal & Milling Company.

The Hoffman Coal & Milling Company, at the corner of Hancock and Scott streets, was established twenty-five years ago. It started handling cement and manufacturing cement blocks, cement paving bricks and telescope flues with air space inside about six months ago. During this time it has made over 4,500 cement blocks, for which it has found a ready sale. There is an increasing demand in the city and also from the farming districts. The company handles Medusa Portland cement, which it delivers promptly by team to all parts of the city. It has found business very fair this year.

Fred Groch Coal Company.

Fred Groch Coal Company, at the corner of Water and Hancock streets, handles a full and complete line of builders' supplies. It is one of the oldest

firms here, having been established forty years ago. A switch track runs into its yard and close up to the doors of the warehouse, which holds over 700 barrels of lime, cement and plaster. The shipping facilities are of the best. The material received in cars over the L. S. & M. S., B. & O., Pennsylvania, Big Four and L. E. & W. railroads is hauled over their switch track into the yard, and from there promptly delivered by team.

The company carries Medusa and Sandusky Portland cements, Speed's Louisville hydraulic cement, plaster of the United States Gypsum Company, hydrate from the Ohio & Western Lime Company and lime in bulk and barrel from the Kelly Island Lime & Transport Company; also sewer pipe from the Buckeye Fire Clay Company; wall coping, flue lining, fire clay, fire brick and drain tile from the Mason Company and the Portland Tile Company. It also handles sand and gravel from the Lake Erie Sand Company.

Business has been somewhat slow, but prospects, Mr. Groch says, "could not be better and next year I believe will see things hum."

Kelly Island Lime & Transport Company.

Business is good at the retail yard and office of the Kelly Island Lime & Transport Company, located at the corner of Water and Perry Streets. Its shipping facilities are of the best in Sandusky. A switch track from all the five railroads entering the city runs into the yard close to the doors of its warehouses, which have a storage capacity of over 6,000 barrels of lime, cement and plaster. The arrangement in its yard for handling supplies is up to date and deliveries are made with clocklike precision and promptness.

CRUSHER PLANT OF THE STONE PRODUCTS COMPANY, PIQUA, OHIO.

This company handles and has the agency for Erie County of the Castalia and Lehigh Portland cements and Louisville hydraulic cement; plaster from the United States Gypsum Company; lime, in bulk, barrel and hydrate, all its own product; sewer pipe and fittings and a full line of clay products. It also handles sand and gravel, operating and owning two large steam sand suckers, which pump sand from three miles out in the lake. It reports the demand for cement in the farm districts as very large and increasing every year.

This retail yard was founded in 1867 by Fred Olemacher, father of F. W. Olemacher, manager of this department and yard, who says "business has been very fair this year and I can not see anything that can check the wave that is now coming our way, bringing to us prosperity greater than we enjoyed for many years, before the panic of two years ago."

C. A. Neilsen Coal Company.

C. A. Nielsen Coal Company became last August the successor to the Wagner Lake Ice & Coal Company, which had been in existence over thirty years. Its yard and office are located at the foot of Hancock Street. It enjoys excellent shipping facilities, as its switch track running into the yard taps all the five railroads entering Sandusky. By means of its arrangement for handling builders' supplies economically and quickly it is enabled to make prompt deliveries. Its warehouse storage capacity is 2,000 barrels of cement, lime and plaster.

It handles Medusa Portland and Louisville hydraulic cements; plaster from the United States Gypsum Company; lime from the Kelly Island Lime & Transport Company, in bulk, barrel and hydrate; sewer pipe and fittings, drain tile, wall coping, flue lining, fire brick and fire clay from the American Sewer Pipe Company, and also sand and gravel.

Mr. Nielsen says "business the last two months, since I have taken hold, has been very good and prospects are bright."

Gallagher Brothers.

It was nineteen years ago that Gallagher Brothers, dealers in flour, feed, grain, cement, lime and sand, located at the foot of Columbus Avenue, and on the Central dock in this city. They have good shipping facilities, being practically along the railroad tracks on which material and goods from all five roads are brought to the city. They handle Medusa Portland and Louisville hydraulic cements; lime in barrel from Gottron Bros., Fremont, O., and the Kelly Island Lime & Transport Company, and hydrate from the Woodville Lime & Cement Company; also sand and gravel and sewer pipe from the Robinson Clay Product Company. Their warehouse has a storage capacity of 1,500 barrels. Business has been good this year and they consider the prospects bright.

PIQUA.

There has been considerable activity in building operations in Piqua this year. Two large factory buildings have just been completed, a number of residences and many streets have been paved and sewers laid. All this has put many men at work, and a large quantity of building material has been used. The dealers here have done a good business so far this year and no complaints are heard. They are all practically agreed that the era of prosperity has set in. Bumper crops of corn, wheat and oats have been harvested in the farm districts surrounding Piqua. The farmer is using much more cement than in any previous year and the people wear an air of contentment and cheerfulness.

New Crushed Stone Plant.

PIQUA, O., Oct. 20.—The Stone Products Co., of Piqua, Ohio, was organized last April with a capital of $50,000. Its officers are J. P. Pogue, president; W. H. Loy, secretary and treasurer, and W. O. Cofield, general manager. The plant is located just outside the corporation limits, southeast of Piqua, with office at 119 Bridge street.

A double switch track running from the crushed stone plant to the main line of the C., H. & D. railway gives the company the best of shipping facilities. This plant has just been completed. Its engine and boiler room are fire proof and constructed throughout of concrete. It has a capacity of twenty carloads of crushed stone, and has a 150-horse power engine to drive its crushed stone machinery, which is all up to date, including the very latest improvements. The floor dimensions of the crushed stone mill are 65x75 feet and 65 feet high.

The marble dust plant for which ground has been broken, adjoining the crushed stone mill, which will be in operation by the 1st of January next, will have a 350-horse power engine and the latest improved crushing machinery.

The company owns sixty-five acres of quarry land containing the very highest grade of Clinton limestone and marble, fluxing stone for steel furnaces, macadam stone for paving and road purposes, marble dust for paint, putties, sealing wax, asphaltum and chicken grits.

W. O. Cofield, manager of this company, is the pioneer in the marble dust industry in Piqua and in this part of the state, and brings to the work a knowledge that will be valuable in future operations.

The stockholders of this new company are J. F. Pogue, W. H. Loy, J. G. Shafer and W. O. Cofield. The first three are well known and successful business men of Findlay, Messrs. Pogue and Loy owning and operating the large stone crushing plant known as the Hancock Stone Co. of Findlay, Ohio, with Mr. Shafer manager.

Morrow & Licklider.

Morrow & Licklider, whose office and yard is located at 531 West Water street, are dealers in coal and builders' supplies. It is a new firm, one year old, but is doing a rattling business. The Panhandle's switch track runs alongside their warehouse, which has a storage capacity of 500 barrels. They furnished part of the cement used in building the factory covering four acres of ground of the great woolen mills of the Orr, Felt & Blanket Company at Piqua, and will furnish the cement used in the paving of High street, which will take over 2,000 barrels.

They have all the shipping facilities they need and have an excellently arranged yard for handling building supplies and making prompt deliveries. They handle Tiger, Atlas and Universal Portland cements, plaster of the United States Gypsum Company, hydrate from the Ohio & Western Lime Company, sewer pipe and fittings, flue lining, wall coping, fire brick and fire clay from the Robinson Clay Product Company. Business has been good this year and they see many indications which point to great activity in all building lines.

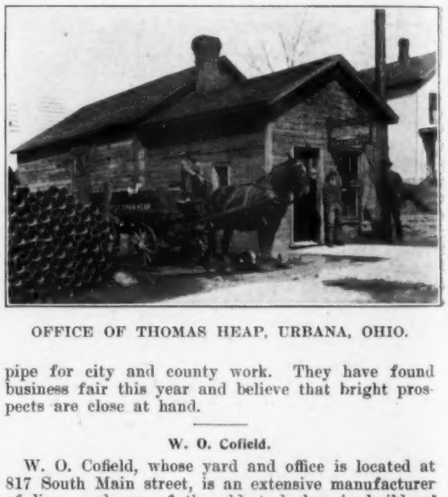
Flach Brothers.

At Wood Street and the tracks of the C., H. & D. Railway, Flach Brothers, dealers in coal and builders' supplies, have their yard and offices. A switch track from the C., H. & D. runs alongside the yard and close to the doors of the warehouse, which has a storage capacity of 1,000 barrels. They handle Medusa and Lehigh Portland cements, plaster from the United States Gypsum Company and hydrate from the Woodville Lime & Cement Company. Their shipping facilities are of the best and their yard is admirably arranged.

This firm furnished part of the cement used in the erection of the great factory building for the Orr, Felt & Blanket Company and the Superior Underwear Company factory, both built within a year, as well as great quantities of cement for paving work. The firm is composed of W. A. Flach and R. B. Flach, the latter being the assistant postmaster of Piqua. They have been in business fifteen years and believe that the "era of prosperity is upon us."

Border City Coal Company.

The Border City Coal Co., Corbley & Beckert, proprietors, are dealers in coal and builders' supplies. Their office and yard are located at 114 North Wayne Street. The storage capacity of their warehouse is 800 barrels. Shipping facilities and those for the handling of material economically and quickly are good. They handle Edison and Whitehall Portland cements; sewer pipe, etc., from the Robinson Clay Product and American Sewer Pipe Companies. This yard has been in existence in Piqua for over thirty years, the present firm taking possession about two years ago. They furnish large quantities of sewer pipe for city and county work. They have found business fair this year and believe that bright prospects are close at hand.



OFFICE OF THOMAS HEAP, URBANA, OHIO.

W. O. Cofield.

W. O. Cofield, whose yard and office is located at 817 South Main street, is an extensive manufacturer of lime, and one of the oldest dealers in builders' supplies in Piqua, having established his business in 1887. A switch track from the C. H. & D. railroad runs clear across the rear end of his yard. The storage capacity of his warehouse is 500 barrels. He handles the Alma Portland cement, and reports business having been a little dull up to August of this year. Since then it has been picking up greatly and is now very good, with exceedingly bright prospects for the coming year.

URBANA AND BELLEFONTAINE.

These two towns have been rather dull this summer so far as building operations are concerned, but this condition has been more than offset by the improvements made in the farming districts surrounding these cities. Barns with concrete foundations, barn floors of cement, cement sidewalks, cement bridges over streams and ditches and the improving of roads has been a general rule with the farmers this year. Dealers in builders' supplies in both cities have done more than a fair business and they believe prospects are unusually bright. Crops of corn and oats are coming up to the most sanguine expectations and farmers have good reason to feel happy.

Elmer E. Stillwell.

The oldest builders' supply yard in Bellefontaine was established by Thomas B. Stillwell over forty years ago on South Opera street, where it is today operated and owned by Elmer E. Stillwell, his son. He carries a full line of builders' supplies, has excellent shipping facilities and the arrangements in the yard are admirable for handling all materials quickly and economically. Mr. Stillwell carries Edison

Portland cement; lime in bulk from the Evans Lime & Stone Company, of Marion, O.; hydrate from the Woodville Lime & Cement Company; plaster from the Fishack Plaster Company, of Toledo, and the American Gypsum Company; sewer pipe and fittings, flue lining, fire brick and fire clay from the Robinson Clay Product Company and Houston Bros., and also handles extensively gravel, sand and common brick. Mr. Stillwell said "business has been good this year and I believe all the indications point to a revival which will put it again on the same plane it was before the break of 1907."

Kerr Brothers.

Kerr Brothers, dealers in coal, wool, grain and cement, have their yard and office corner of Elm and Auburn streets. Three switch tracks run into the yard, two from the Big Four and one from the T. & O. C. railroad. The warehouse has a storage capacity of 500 barrels of cement, of which they handle the Medusa Portland brand. They manufacture cement blocks, which farmers use extensively in building hen, smoke and hog houses. They run two Miracle double air space block machines, which have a capacity of turning out 150 blocks a day. They have had a good year's business so far and expect a great improvement in the near future.

Keller & Gebby.

Keller & Gebby, dealers in grain, coal, wool and cement, are located at 314 to 322 West Columbus avenue. Their warehouse has a storage capacity of 500 barrels of cement, of which they handle the Lehigh Portland make. They have been in business here since 1886, are one of the prominent firms in Bellefontaine, and report their trade has been fair this year and look upon the future as full of bright prospects.

Thomas Heap.

Thomas Heap, successor to Anderson & Heap, has been in business in Urbana, dealing in coal and builders' supplies at 400 Miami street, near the Big Four tracks, for about ten years. This yard was established by an old citizen named Kimber fifty years ago. Mr. Heap is a young man of great activity and business ability and for a number of years has bought wool of the farmers, going out among them and forming pleasant acquaintanceships, which has stood him in good stead in building up a large business in builders' supplies. An old citizen of Urbana said of him that he was very popular throughout the county, liked by everybody and everybody dealt with him, and he deserved the success he had made. Mr. Heap has recently built one of the best and most convenient warehouses in the state, which has a storage capacity of 800 barrels of cement, lime and plaster. He handles Atlas and Tiger Portland cements; lime in bulk and hydrate from the Woodville Lime & Cement Company; plaster from the United States Gypsum Company; and sewer pipe and fittings, flue lining, fire brick and fire clay from the Robinson Clay Products Company.

His shipping facilities are excellent and his yard admirably arranged for handling quickly and delivering promptly. Business has been very good this year, farmers buying much greater quantities of cement than in any previous year, and all indications, he says, point to the fact that prosperity is here.

Joseph Murphy.

Joseph Murphy, at 518 Miami street, is a dealer in coal, lumber, cement and plaster. A switch track from the Big Four runs close by the doors of his warehouse, which has a storage capacity of 1,500 barrels of cement and plaster. He handles Alpha Portland cement and American Gypsum Company's plaster. He states he has found business dull this year, farmers buying little cement, and can see no change in the future for the better.

COLUMBUS GROVE AND DESHLER.

There has been little building in Columbus Grove this year, which condition also holds good in Deshler, but a number of public improvements are being made in the latter city, in paving streets and laying sewers. The dealers in both cities have had a fairly good business this year, especially in cement which has been taken in the rural districts in larger quantities than in any former year. Little is expected from the crops in the farm districts near these towns as they lie partly on the edge of what was known in the old days as the black swamp.

People's Elevator.

The People's Elevator, Jerome Elliott proprietor, located on Sycamore street, Columbus Grove, was established twelve years ago. Mr. Elliott deals in coal, salt, flour and builders' supplies. A switch track from the D., T. & I. railway runs alongside the yard and warehouse. The latter has a storage capacity of 600 barrels of cement, lime and plaster. The principal brands handled are Castalia and Universal Portland cements; hydrated lime from the Ohio & Western Lime Company, and plaster, the product of the American Cement Plaster Company. Mr. Elliott also manufactures cement blocks, the output of which runs a little over 2,000 a month. The sales of cement in the farming districts he says are 50 per cent more than last year and the business of this year he regards very satisfactory with an exceedingly bright outlook.

Columbus Grove Lumber Company.

The Columbus Grove Lumber Company, located on High street and crossing of D., T. & I. railway, was established over forty years ago, the present members of the company, H. F. Light, F. E. Palmer, J. A. Seitz and Benj. F. Seitz, Jr., succeeding the old firm nine years ago. A switch track from the D. T. & I. railroad runs alongside of the yard and warehouse, which gives it all the facilities it needs for handling economically and delivering promptly its builders' supplies. It handles Diamond Portland cement; hydrate of lime from the Kelly Island Lime & Transport Company; plaster of the Napoleon Elastic Pulp Plaster Company and the American Gypsum Company; sewer pipe and fittings, flue lining, fire brick and fire clay of the Robinson Clay Product Company, and sand and gravel from the Ohio & Michigan Sand & Gravel Company. It also manufactures cement blocks, the output this year thus far being 10,000 blocks. The company has doubled its

COLUMBUS GROVE LUMBER COMPANY, COLUMBUS GROVE, O.

cement sales in the farming districts this year over last year's sales, has no complaint to make about business and believes the future has good things in store for everybody.

Lyttle Lumber Company.

The Lyttle Lumber Company has been in existence in Deshler a number of years and handles cement, lime, plaster and all kinds of building materials that enter into residence, factory, business block or public buildings.

OTTAWA.

There are many building plans in contemplation in Ottawa, Ohio, which will make the little town hum next year. Prominent among these projects is the building of a $200,000 court house. Dealers in building supplies this year have done well and believe that still better times are coming. Being located in what is known as "the black swamp district," the people of Ottawa don't count much upon crops, but despite this the town is prosperous.

Ottawa Vault Company.

The Ottawa Vault Co., Stover & Smith, proprietors, located at Main street and the D., T. & I. railway, is an extensive dealer in builders' supplies. A switch track runs into the yard and close to the warehouse, which has a storage capacity of 600 barrels. The facilities of the yard for receiving and handling cement, lime and cement blocks are of the best in Ottawa. Deliveries to all parts of the city by team are always prompt, which is much appreciated. The brands of cement handled are the Lehigh, Huron and Dexter Portland, and hydrate from the Woodville White Lime Co.; sand, gravel and crushed stone from the Kelly Island Lime & Transport Co.

This company manufactures a cement block which possesses qualities that have made it very popular. It is made of ground stone, cement and sand. Last year the output was 22,000 cement blocks, and this year they have thus far sold as many, with the busiest season still before them. These blocks they sell principally to farmers who use them for foundations. They also manufacture a cement burial vault, with moulds which are under patent. These vaults, it is claimed, will not sweat, nor will they rust the casket. Their business has been good this year and they expect a rushing business the remaining months of this year.

Henry Williams.

Henry Williams, dealer in coal and builders' supplies, has his yard and office located on Fourth street, at the end of Oak street. The business was established by his father, G. C. Williams, over forty years ago. In 1896 he became a partner and has been running the yard since that time. It is on the C., H. & D. Railway, a side track running alongside the yard and warehouse, which has a storage capacity of 1,000 barrels. He handles Castalia Portland cement; lime in barrels and hydrate from the National Lime & Stone Co.; plaster of the American Gypsum Co.; sewer pipe and fittings, flue lining, fire brick and fire clay of the American Sewer Pipe, and Robinson Clay Product Companies; sand and gravel of the Elks Supply Co., and the Tecumseh Gravel Co., Mich., and crushed stone from the Goetchins Stone Company of Lima.

Mr. Williams has good facilities for receiving, shipping and handling all this material easily and economically. He reports a heavy increase in the demand for cement in the farm districts over last year. Business was quiet this year up to August, but since then it has been brisk.

Weber Lumber Company

The Weber Lumber Company, located at the corner of Main and Perry streets, has been in business only since last fall, but has already gained an extensive trade. It is reaping the advantages of the era of prosperity which has set in and will become an important factor in its line in this section of the state. M. B. Weber, its proprietor, is young, active and energetic, and thoroughly understands what is needed for a successful business career. The warehouse has a storage capacity of 500 barrels. He handles Atlas Portland cement; lime in bulk and hydrate from the Ohio & Western Lime Co. and plaster from the Fishack Plaster Company. His sales of cement in the farm districts are much larger than in the city.

F. Van Fender.

F. Van Fender is a building contractor at Ottawa, Ohio. He has lived in Putnam County twenty years and intends to start a yard shortly with a full line of builders' supplies. In his building operations in the farm districts for barns, dwelling houses, etc., which have been quite heavy this year, he has used a large quantity of Atlas cement. He is now putting up in the Ottawa fair grounds, a mile east of the city, Grangers' Hall, a building 28x144. Its foundations are of concrete piers, in which sixty barrels of Tiger Portland cement were used. The superstructure is of oak, with galvanized iron roof. He says there are many buildings in contemplation in Ottawa.

TIFFIN.

There are two lime and stone concerns in Tiffin, Ohio, busily engaged enlarging their plants to supply the demand for crushed stone and lime, which are extensively used in the neighboring districts on both farms and roads. The dealers here have all been doing a good business this year and believe there are exceedingly bright prospects ahead for them. Crops have been unusually good and the farmers are enjoying to the full the era of prosperity which is now extending to all lines of business in Tiffin.

Crobaugh & Dahm Hardware Company.

The Crobaugh & Dahm Hardware Company, located at 117 and 119 South Washington street, handles a full line of builders' supplies. This store was founded in 1847 by J. M. Naylor. In 1892 Mr. Crobaugh was admitted to partnership and the firm name became J. M. Naylor & Co. In 1898 the present firm came into existence. The company handles Medusa Portland cement; plaster, the product of the United States Gypsum Company, and hydrate from the Ohio & Western Lime Company. Mr. Crobaugh says business has been as good as last year and the outlook he considers exceedingly bright. The warehouse in which they store cement and lime and plaster has a storage capacity of 500 barrels.

Gillig & Son Building Supply Company.

Gillig & Son Building Supply Company, located at 153 South Washington street, has been in business five years and is one of the prominent houses in Tiffin. It handles Castalia Portland cement; hydrate from the Ohio & Western Lime Company, and plaster, the product of the United States Gypsum Company. Its

sales of cement to the farmer have doubled each year for the last four years. Arthur Gillig, the junior member of the company, says: "Business has increased by quite a little over that of last year and I consider that the prospects ahead are very bright. People are beginning to show decided confidence here in the future."

C. H. Lines.

C. H. Lines' hardware store is located at 61 South Washington street. This business was established over fifty years ago and Mr. Lines succeeded to it several years ago. About six months back he commenced handling Castalia Portland cement and American Gypsum Company's plasters. He is selling a great deal of these two materials in the farm districts and in the city of Tiffin.

FOSTORIA.

In Fostoria building operations this summer have been quite extensive. Prominent among the structures that have been erected are two large school buildings, a new Catholic school, and the Union school building, all of them pretentious structures, modern in every detail. Two lime kiln plants are located here, which lately have found it hard work to fill orders promptly, although running at full capacity and overtime. Dealers have done a good business this year and expect a rushing trade this fall. The crops of corn, oats and wheat were bumpers around Fostoria and the farmers are making improvements on their farms far in excess of any they did last year.

W. S. Sutliff & Company

W. S. Sutliff, senior member of the firm of W. S. Sutliff & Co., with office at 224 Main street, is one of the oldest lime dealers in the state, dating as far back as 1873. He was a director and manager of the Seneca Lime Company for over three years, and when that company sold out to the Ohio & Western Lime Company he became the manager of its Fostoria plant. Leaving the Ohio & Western Company a year ago he started in business for himself, forming the present firm, which is one of the leaders in Fostoria, handling builders' supplies.

The firm has three yards, one located on the T. & O. C. and the other two on the L. E. & W. railroad. Switch tracks from these roads run into each yard, giving them splendid shipping facilities, and added to this the convenient and practical arrangement of the yards enables them to handle all material in the most economical manner. The storage capacity of their warehouses is 1,000 barrels. They handle Atlas, Medusa and Universal Portland cements; lime in bulk and barrel from the kilns in Fostoria, and hydrate from the Ohio & Western Lime Company; plaster from the United States Gypsum and Fishack Plaster Companies, and sewer pipe and fittings from the American Sewer Pipe Company.

Mr. Sutliff says: "Farmers are using more cement than they did in any previous year, and their trade is increasing rapidly. Business has been very good and prospects are more than bright."

J. H. Jones.

J. H. Jones, whose office is at 635 North Main street, has been in business here twelve years, most of the time as a contractor for buildings. He has a fine contract for the mason work on the new Catholic school. Its cost will be $35,000. He has just completed the mason work for the Union school building, which cost $50,000. His yard and stone block factory are on Poplar street. A switch track from the B. & O. and the Nickel Plate railroads runs into his yard, giving him the necessary shipping facilities. The warehouse has a storage capacity of 1,000 barrels. He handles and is the agent here for the Castalia Portland cement, and also handles brick, sand and crushed stone. Mr. Jones is said to be the largest contractor for mason work and cement sidewalk in Fostoria, as he is the largest manufacturer of cement stone blocks.

Fostoria Cement Products Company.

The Fostoria Cement Products Company, at 551 West Fremont street, manufactures everything that is made of sand and concrete, such as building blocks, all kinds of ornamental porch work, vases and sidewalks. The product of this company is largely sold to farmers within a radius of fifteen miles of Fostoria.

Lindsey Cement Block & Roofing Company.

At East Tiffin street and the Ohio Central tracks is the yard and factory of the Lindsey Cement Block & Roofing Company. A switch track from this road runs alongside the yard, which is 40x300 feet. The storage capacity of its warehouse is 300 barrels. It handles Lehigh Portland cement, plaster from the Grand Rapids Plaster Company, and has the agency of Sackett's Plaster Board for Fostoria. The rest of the stock embraces lime in bulk, barrel and hydrate from the Ohio & Western Lime Company; common and pressed building brick, fire brick, fire clay and flue lining, and sand from the Lake Sand & Gravel Company, Toledo.

This company manufactures cement roofing and cement fence posts. Franklin P. Lindsey has been a building contractor for thirty-five years. He states that business has been fair this year and that prospects are bright.

FREMONT.

Fremont, Ohio, is prosperous and its people are contented. It has put up a number of buildings and made some much needed public improvements this year. Dealers all report that they have done a satisfactory business and are solidly of the opinion that it is fast getting into the condition it was before the panic of two years ago. The crops of corn, oats and wheat are fully up to expectations and the farmers are making improvements on their farms greater than in any past year, using large quantities of cement where in former years they used wood.

Gottron Brothers.

Gottron Brothers, just outside the city limits of Fremont, on West Crogan street, own about forty acres of quarry land, which contains stone of a quality very high in magnesia (about 45 per cent) which is said to be just right for producing a high quality of lime. They have been manufacturing lime since 1877, but have not made as much lately as in former years. They will now, however, shortly put in hydrating machinery and place on the market a product of their own as they have found that the stone in their quarries is of the proper quality to produce a superior article. These quarries were opened fifty-five years ago by a man named June. In 1862 Philip Gottron bought part of June's holdings, and in 1877 the Gottron Brothers got possession of the entire quarry, and have operated it from that time on. They have handled cement and lime from the start and six years ago began handling coal and running a grain elevator. They also have a crushed stone mill on the plant, equipped with a McCully crusher, with a capacity for crushing 200 yards of stone a day.

They have excellent shipping facilities, as two switch tracks run into their grounds, one from the L. E. & W. and the other from the Lake Shore railway. The warehouse has a storage capacity of 1,000 barrels. They carry Castalia Portland cements, hydrate from the Kelly Island Lime & Transport Company, and National Lime & Stone Company; the Cresceus brand of plaster, made by the Toledo Builders' Supply Company, and sewer pipe and fittings from the American Sewer Pipe and Robinson Clay Product companies; a large line of roofing slate from the Vermont Slate Company, of Zanesville, Ohio; fire brick, fire clay, flue lining, etc. All this material is promptly delivered by team to any part of the city. Mr. Gottron says: "Cement business has been better than it has been for years and is increasing. There is a bright future for the builders' supply dealers, sure."

Union Elevator & Supply Company.

The Union Elevator & Supply Company, on North Center street, was established six years ago. It deals in grain, wool, hides, coal and builders' supplies. Its shipping facilities are among the best in Fremont, having a switch track run into its yard from the W. & L. E. railway; and the arrangements in the yard are such as to insure prompt delivery of materials. Its warehouse has a capacity of 800 barrels. It handles the Diamond and Superior Portland cements; hydrate from Gibsonburg and plaster of the S. S. Plaster Company, of Fremont. Wesley Smart and R. G. Stull are the owners of this plaster company, which manufactures an excellent hard wall plaster which is well thought of in this section of the state and has a big sale. It has only been manufactured since the first of the year. The Union Elevator & Supply Company also handles sewer pipe and fittings from the American Sewer Pipe Company.

R. G. Stull, secretary and treasurer, says: "Our cement trade with farmers has increased to three times what it was two years ago. Our business has been fairly good, and is opening up now fine."

Wolfe Bros. Elevator Company.

Wolfe Brothers Elevator Company, which handles builders' supplies, its principal business being hay, grain and coal, has its yard and office at 1235 West Napoleon street, and was established seven years ago. Its shipping and delivery facilities are good, a switch track from L. E. & W. railway running close to the warehouse, which has a storage capacity of 500 barrels. It handles Atlas Portland cement; lime from the National Stone & Lime Company, Cary, O., and plaster from the Michigan Plaster Company.

Mr. Wolfe said: "The farmer is the cream of our trade in cement. Business has been good this year and it is going to be much better because confidence has returned."

Riverside Fuel & Supply Company.

The Riverside Fuel and Supply Company's coal yard is located at West State street bridge. It was known for forty years as John Perot's coal yard. In builders' supplies it handles cement and plaster. It has good shipping facilities, having a switch track run into the yard from the L. E. & W. railway, and makes prompt deliveries to all parts of the city. The storage capacity of its warehouse is probably not much over 500 barrels.

WAPAKONETA.

Wapakoneta lies in one of the richest farming districts of the state, and as the crops of corn and oats and wheat have been exceptionally good, so in proportion has been the business of this little town. Its dealers have enjoyed a good trade this year, having sold a larger quantity of cement to the farmers than ever before. They believe prospects are exceedingly bright.

Jos. L. Whiteman & Company.

Jos. L. Whiteman & Co., dealers in builders' supplies and coal, located at 11 Pearl street, have been in existence twenty-six years. A switch track runs alongside their yard from the C., H. & D. railroad. The yard is conveniently located and splendidly arranged for handling all the material stored in it economically. The firm handles Lehigh Portland cement, the Ohio & Western Lime Company's hydrate and lump lime in barrels; the Fishack Plaster Company's product, and the Buckeye & Summit Sewer Pipe Company's sewer pipe and fittings, flue lining, fire brick, fire clay, mortar and plastering hair. They report a heavy increase in the use of cement in the farming districts and add that business was only fair in the early part of the year, but since August has been picking up wonderfully.

Wapakoneta Cement Block Company.

The Wapakoneta Cement Block Company, corner Benton and Willipie streets, was established in 1903. H. C. Wentz is its treasurer and general manager. A side track from the C., H. & D. runs alongside its yard and warehouse, which have a storage capacity of 400 barrels of cement. It manufactures extensively cement blocks for foundations and superstructures, porch tiers and columns, fence posts and concrete wall coping. The company sells and handles also sand and crushed stone.

Wapakoneta Grain Company.

The Wapakoneta Grain Company, E. S. Sheets, president; J. C. Paul, secretary and treasurer, and Herbert Sheets, vice president, was established in 1907. It is located on the T. & O. C. railway, a switch track running from this road alongside the yard and warehouse. The latter has a storage capacity of 1,000 barrels. Atlas is the principal brand of Portland cement carried; plaster from the Grand Rapids and Dayton Fibre Plaster companies; lime in barrels and hydrated from the Woodville White Lime Company; and sewer pipe, fire brick, fire clay, flue lining, etc., of the American Sewer Pipe and Robinson Clay Product companies.

E. C. McCullough, the company's manager, said: "The farmers' trade in cement is rapidly increasing every year, and we sold more cement, plaster and lath last month than we did in three months the same period last year. We also deal in grain, seeds and coal."

A Correction.

On page 44 of the September issue of ROCK PRODUCTS in the article under the head of "Crane Building Completed," the statement was made that Crystal Rock plaster, manufactured by the American Cement Plaster Co., of Lawrence, Kan., was used on this building. J. C. Lovelace, of the John A. Denies Sons Co., Memphis, requests us to change this statement by substituting Acme cement plaster as having been specified and used.

The Fox River Sand & Gravel Co., Chicago, Ill., has been incorporated to deal in sand and gravel. Capital stock, $100,000. Incorporators, J. Neely, E. Neely and M. J. Sullivan.

CEMENT

Rally All Along the Line.

There is a better feeling of confidence in the cement industry than has been in evidence since the first of the year. With the rapid depletion of stocks and stronger market the fag end of the season looks good. It has been a long, wearisome drag in some quarters this season, and the present activity is all the more refreshing. In spite of the depression at the first part of the season, when all the records of 1909 are checked over it will be found that this has been the record breaking year in the consumption of cement. New uses and more new users of cement must be found to keep up steadily such an enormous consumption of even this most indispensable product.

Situation In the Southwest.

Kansas City, in the past few years, has come to the fore as one of the cement centers of the United States. Nearly all the mills in the southwest territory have either their general office or a branch office in this city, and it has become an important cement center. A ROCK PRODUCTS representative recently visited all of the manufacturers and found every one of them busy, and naturally happy over the turn the market had taken. It has resolved itself to the place where it is not a question of the market price for demand but whether shipments can be made with promptness and despatch, as the general movement of crops and other materials in the southwest has taxed the railroads to the utmost of their carrying ability.

Monarch Operating Two Kilns.

The Monarch Portland Cement Co., of Humboldt, Kan., has two kilns in operation, though its entire mill has not been completed. It has adopted the "Lion" as its trade mark. Work on the mill will be rushed as rapidly as possible to completion.

Maryland Portland to Expand.

BALTIMORE, MD., Oct. 15.—The Maryland Portland Cement Co., of Baltimore, proposes to change its title to the Security Cement & Lime Co., with a capital stock of $2,000,000 and a bond issue of $1,000,000. It provides for taking over the Berkeley Limestone Co., and properties at Martinsburg, W. Va., and operating a large modern plant for the production of lump lime, hydrated lime and other lime and stone products, the daily output of lump lime being 2,000 barrels. Dr. Lazelle, of the Charles Warner Co., Wilmington, Del., will be the engineer in charge. The Security Cement & Lime Co. will probably organize with the following officers: President, A. W. Page, president of the Nazareth Cement Co., Nazareth, Pa.; vice-president, Charles Warner, of the Charles Warner Co., Wilmington, Del.; secretary-treasurer, Loring A. Cover, president of the Maryland Portland Cement Co. The latter company has determined all details for its recently announced enlargement of the plant at Security, Md. Its improvements will include the erection of a 100x200-foot concrete and steel stockhouse costing $45,000, the installation of two kilns 128 feet long by 8 feet in diameter, the addition of a 1,200-horsepower steam turbine to the 1,400-horsepower steam engines now used, the installation of all accompanying equipment, and the erection of a crusher to furnish stone for manufacturing cement, ballasting and other purposes. These improvements are to be completed by next May and will increase the company's daily output from 800 to 2,400 barrels of Portland cement. The engineer in charge of these improvements is F. H. Lewis, of Leeds, Ala., who was in charge of planning and constructing the original plant. The Maryland company increases its capital stock from $400,000 to $800,000 in connection with the improvements.

Cement Mill For San Bernardino Co., California.

Contracts were recorded in San Bernardino, Calif., on September 22, by the Arrowhead Portland Cement Co., for the erection of a 1,000 barrel per day mill, to be located at Etiwanda, San Bernardino county. Smith, Emery & Co., chemical engineers of San Francisco, will have entire charge of the work, and it is proposed to have the plant finished and in operation inside of twelve months. The cost of the mill and equipment will be about $700,000, the greater portion of the capital being furnished in Los Angeles.

Two surveying parties are in the field, one locating the five miles of railroad connecting the mill with the Santa Fe road at Etiwanda; the other locating the various buildings, quarry faces, etc. The preliminary plans have been completed, and the grading and construction work will begin on September 27. This makes the third cement mill for San Bernardino county.

Purchase Cement Land.

POUGHKEEPSIE, N. Y., Oct. 18.—The American Cement Co. has bought the Arthur Sherow farm two miles north of Pleasant Valley to add to its other holdings in this section. The consideration was $6,000. Title will be passed April 1. Work on the company's plant will start as soon as the title to the property can be perfected.

Cement Plant to Be Enlarged.

ITHACA, N. Y., Oct. 19.—Officers of the Portland Cement Co., situated on Cayuga Lake, about three miles from Ithaca, announce that the plant will be enlarged to twice its present size. Work has been stopped pending the construction of a number of new buildings and the installation of new machinery.

Purchase Interest In Cement Plant.

The Alpha Cement Co., of Easton, Pa., has purchased a controlling interest in the Catskill Cement Co.'s plant at Cementon, N. Y.

Cement Plant Sold at Receiver's Sale.

BELLEFONTAINE, OHIO, Oct. 18.—Receiver J. S. Josse has sold the plant of the Union Portland Cement Co., at Rushsylvania at public sale to Dwight Harrison, of Columbus, trustee for the mortgagees. The price was $26,170, two-thirds of the appraisement. The mill will be dismantled.

Peat For Power and Fuel Gas.

In a recent bulletin of the U. S. Geological Survey on "The Production of Peat in 1908," the following paragraphs on the value of peat for fuel appear:

The most recent fuel use of peat is that for making it into power and fuel gases, the former being thoroughly tested more recently than the latter. Power and fuel gases are made by heating the fuel from which they are derived in cylindrical furnaces lined with fire brick. The simplest form of the gas producer, as such furnaces are called, is a tall cylinder with a grate near the bottom and an opening for the air to enter, below which is placed a shallow tank of water into which the ashes fall and which serves also to seal up the bottom of the cylinder so that air cannot leak into the fuel bed. At the top of the cylinder are the openings for the introduction of fuel and the outlet of the gas generated, and at intervals down the sides there are gas-tight doors for cleaning and repairing the inside of the producer. The gas producers differ from the ordinary heating furnaces chiefly in the degree of the combustion. In the gas producer the heat obtained by the complete combustion of the bottom layers of a thick fuel bed converts the rest of the fuel into gases that can still take up oxygen into chemical combination, and that thus have fuel value; the only other products, theoretically, are inert gases and ashes. In furnaces of ordinary kinds the fuel of a thin fuel bed is completely oxidized for generating heat, and the products are inert gases and ashes.

The growth of the use of gas as fuel for running gas engines of the explosive type has of late years been very rapid, especially since it has been found that low-grade producer gas and blast furnace gases are much more efficient in proportion to the number of heat units per cubic foot than the high-grade and more costly gases obtained by distilling coal in retorts. Thus it is reported that a gas engine which gave 100 horsepower with natural gas, which has a high calorific value per cubic foot, gave about 80 horsepower with producer gas, which has only about one-fifth as high calorific value as the natural gas. Moreover, in the gas producer the fuel economy is so great that grades of fuel that could not be used for steam generation may be used with entire satisfaction, and among the fuels now being used for the purpose of obtaining power and fuel gases in Europe peat is finding a steadily growing use. Well-prepared peat yields from about 40,000 to over 80,000 cubic feet of producer gas per ton of dry matter when gasified in a correctly designed gas producer, and the gas has quite as high calorific value per cubic foot as gas made from coal in the same type of producer. The types of gas producer which have given the most satisfactory results with peat are the pressure and the downdraft, because these types admit of ridding the gas more thoroughly of tarry and other substances than the suction type, in which the engine is connected directly with the apparatus of the gas producer and develops the charge of gas it uses by the suction stroke of its piston. The suction gas producer has, however, been used successfully with peat in Europe as well as the other types.

Cement Output In Utah.

According to statistics compiled by State Statistician H. T. Haines, the cement output in the state of Utah in 1908 was almost double that of the previous year. The number of barrels of cement manufactured in Utah last year was 469,427, as against only 271,123 in 1907. The value of the cement manufactured in 1908 was $568,372.50. The capital invested in the business last year was $2,800,000.

Report on Action of Sea Water on Concrete.

Late in 1908 it was very generally reported that tests had been undertaken by the Aberthaw Construction Co., Boston, Mass., in co-operation with the Navy Department at the Navy Yard, Charlestown, Mass., to determine by exposure over a long period what effect sea water might have upon concrete. The specimens were made of various grades of cement in widely differing proportions, and were so placed that the lower portion of the surface of each would be continuously exposed to water, while the upper portion was always exposed to air, and the middle portion alternately exposed to each. At the end of six months of actual exposure, which was recently terminated, a very critical examination was made. Although the specimens had been exposed to freezing temperature during several months of the winter, and to the variable conditions of midsummer, this examination failed to disclose any visible change in the surface of any of the specimens. It is independently stated by the cement chemist, Mr. H. L. Sherman, of Boston, that all cements are behaving in a perfectly normal manner and the tests to date appear to be perfectly satisfactory. It is his opinion that a considerable time must elapse before any results will be obtained which will tend to throw any additional light on the effect of the water on concrete, or on the effect of various compositions of cements.

THE HICKSON CONCRETE MONOLITHIC JOINTLESS SEWER PIPE.

A Jointless Concrete Sewer Pipe.

Various forms and systems of concrete sewer construction have been mentioned in previous issues of ROCK PRODUCTS. These have developed until this is one of the most universal types of sewer construction in use. Joseph Hickson, of Mt. Gilead, Ohio, is the inventor of a form for a monolithic sewer pipe which has met with no little success.

The forms are of steel and so jointed as to form a continuous jointless pipe. The shell is of steel and the centers or cores are first placed in the bottom of the trench. The whole circle of the shell is laid at one time. The shell is supported with turn buckles inside and allowed to remain until the concrete has set. Then the shell is taken out, as it is collapsible.

The forms into which the concrete is poured may be removed after the set has been obtained. These are easily taken out by hooks, drawing each section out of the trench.

Oscar O. Ayers and others interested are arranging for a site for a Portland cement plant, at Ardmore, Okla. The contemplated daily capacity is 5,000 barrels, reported cost $1,000,000. Work is to commence in the spring of 1910.

Gypsum and Gypsum Products Statistics for the Year 1908.

The Department of the Interior of the United States Geological Survey has issued some very interesting statistics relating to the production of gypsum and its products. The data has been compiled by Ernest F. Burchard. Excerpts from the report follow:

The characteristic features of the trade in gypsum products in the year 1908 were a moderately decreased demand and lower prices than have prevailed at any time within the last three years. While the financial stringency of 1907 and its resultant effects on the industrial world are factors that have adversely influenced the gypsum market, the conditions noted are not to be wholly ascribed to these factors. The general decrease in the price of Portland cement, lumber, steel, brick and other structural materials to a certain extent stimulated building operations, so that proportionately the output of gypsum was not curtailed so greatly as was that of many other mineral products. The prices were seriously affected by the industrial depression, it is true, but the general decrease in price is more directly due to the very active competition that is becoming charactristic of the gypsum business. Keen competition involving price cutting, introduction of specialties, more liberal advertising and an aggressive campaign for trade on the part of the well-established companies have resulted in a suspension of many of the smaller plants not physically or financially fitted to withstand the strain. Concentration of interests has naturally followed. Many small plants, meritoriously situated, with good supplies of raw material, have been taken over through lease or purchase by firms that control groups of mills.

A geographic anaylsis of conditions is not only of interest, but is essential to a just estimate of this industry at large. In the group of Rocky Mountain and Pacific States, including Alaska, the business as a whole showed a slight increase in tonnage of manufactured products, but a small loss in total value. In Michigan the total gypsum mined slightly exceeded that for 1907, but this excess was evidently not taken up by the sales end of the industry. All the other producing localities showed moderate decreases in manufactured products and considerable decreases in values.

The three largest producers are, in order, Michigan, New York and Iowa. Texas, Ohio, Oklahoma, Kansas and California are also important producers.

New Developments.—Seven new plants were added to the list of producers in 1908, two of these being in New York, and the remainder in Arizona, New Mexico, Nevad and Colorado. In addition, nine new mills were in various stages of construction, but not in operation. Most of these mills were in the West and Southwest.

Production and Disposition.

The quantity of gypsum mined in the United States in 1908 was 1,721,829 short tons, as compared with 1,751,748 short tons mined in 1907, a decrease of 29,919 short tons, or 1.7 per cent of the 1907 production. The total value of the gypsum products in 1908 was $4,138,560, as compared with $4,942,264 in 1907, a decreased of $803,704, or 16.7 per cent of the 1907 value. The decrease in quantity sold was entirely confined to crude gypsum both in the lump and the ground form. The prices of this class of material fell only 4 to 7 cents per ton. The quantity sold as calcined plaster actually showed an increase of 316 short tons over the tonnage sold as such in 1907, but the decrease in value was heavy, amounting to 67 cents per ton, or nearly 18 per cent of the 1907 price. The average price for calcined plaster in 1907 was $3.91 per ton; in 1908 it was $3.24.

The production of special gypsum plasters, such as Keene's cement, and of plaster specialties, such as plaster studding, plaster lath and plaster board, is increasing rapidly. Keene's cement is a hard wall plaster, produced by completely dehydrating pure rock gypsum through long continued heating to a high temperature and adding to the ground product small quantities of alum, borax and other materials, which act as binders when water is added to the mass. This product is adaptable for fine interior finish and for ornamental plastering, caps, molds, bases and extra fine white finish. It is also used for the manufacture of artificial marble. It finds its most ready market in the large eastern cities.

Imports.

The gypsum which is imported into the United States comes, except a few hundred tons annually from France and Great Britain, almost wholly from Nova Scotia and New Brunswick, and enters the ports of the New England and North Atlantic States, over one-half of it entering the port of New York. This imported gypsum is nearly all calcined and converted into wall plasters by plants along the seaboard as far east as Red Beach, Me. A small quantity of the material is used crude as land plaster, and some is mixed in patent fertilizers.

The following table shows the imports for consumption into the United States from 1904 to 1908, inclusive:

Gypsum imported and entered for consumption in the United States, 1904–1908, in short tons.

Year.	Ground or calcined.		Unground.		Value of manufactured plaster of Paris.	Total value.
	Quantity.	Value.	Quantity.	Value.		
1904	3,278	$11,276	294,238	$321,306	$23,819	$356,401
1905	3,889	20,883	399,230	402,328	22,948	446,159
1906	3,587	22,821	436,999	464,725	21,183	508,729
1907	1,979	12,825	458,911	486,206	36,628	535,658
1908	1,889	12,825	300,158	314,945	26,733	354,403

Another Project at Fort Dodge.

FORT DODGE, IA., Oct. 15.—Incorporation papers for the Wasem Gypsum Co. have been filed by Adam Wasem, a pioneer settler in this section, and his thirteen children, seven sons and six daughters. The capital stock is placed at $150,000 and it is estimated the mill, which will have all of the latest improved machinery, will cost in the neighborhood of $100,000. Adam Wasem, Jr., will be president of the new company, Otto Wasem manager, Will Wasem vice-president, and Ella Wasem treasurer. The directors of the company will be Adam, Jr., Otto, Will, Henry and Ella. The new mill will be built on the old Wasem homestead near the crossing of the Illinois Central and the Chicago Great Western, thus giving the benefit of connections with each of the railroads. It is expected offices will be maintained in the city, but this matter has not yet been settled.

First Kellastone In Toledo.

TOLEDO, O., Oct. 18.—Collings & Kibbee are using, for the first time in Toledo, a new plaster material, on a two-story terrace building at Fourth and Oswald streets. The material is known as "Kellastone," and is manufactured by the firm, which recently purchased five acres of swamp land along Stickney avenue and will start a plant here. The plaster is of milk white color, durable, strong, sanitary and easy of application.

Plant Nearly Completed.

SUPERIOR, WIS., Oct. 19.—The plant of the United States Gypsum Co., at the lower end of Tower avenue, which was burned this summer, is now nearly rebuilt and will be ready for business shortly.

Consolidation of Interests.

NEW YORK, N. Y., Oct. 18.—The Sackett Plaster Board Company, 17 Battery Place, makes the following announcement:

"We take occasion to announce a consolidation of our interests with those of the United States Gypsum Co. By this amalgamation this rapidly growing industry is assured, in perpetuity, of the most economic conditions of production and distribution; owns its mines, makes its own plaster, and has immediately available for general distribution throughout the United States, the full force of the unrivalled sales organization of the United States Gypsum Co.; also, full control of the manufacture of wall plaster with which to finish our product on the wall, to the utmost satisfaction of the ultimate consumer.

"This office will be conducted, for the present, as heretofore, with Fred L. Kane as manager.

"With our increased facilities and complete line of gypsum products, we respectfully solicit a continuance of your appreciated patronage."

New Company In Oregon.

PORTLAND, ORE., Oct. 15.—Eugene Pearson has organized a company here, of which he is the president, W. L. Moore vice-president, and Carrol D. Hurlburt treasurer. The company is capitalized at $100,000, fully paid in, and will manufacture "Macite," a fireproof, waterproof, soundproof, and sanitary partition material. It is a material composed largely of gypsum, which will be brought here from Alaska.

The company has taken a lease on the plot with buildings at the northwest corner of Twenty-second and Reed streets. There are two large buildings covering a quarter of a block, and trackage is furnished by the O. R. & N. railway. The lease covers a period of five years. The machinery is now being installed, and it is said will represent an outlay of $20,000.

New Plaster and Material Plant Ready.

MEMPHIS, TENN., Oct. 14.—The National Plaster & Material Co. has recently completed its large plant on Nichols avenue and the Union Belt Line. The factory was erected at a cost of $10,000 and will employ fifty men.

Will Erect a Plaster Mill.

BINGER, OKLA., Oct. 16.—J. H. Ayers of Hanton has completed arrangements for a plaster mill at the gypsum beds on the Indian land just east of the railroad track, two and one-half miles north of this place.

Prepare to Work Gypsum Quarries.

RENO, NEVADA, Oct. 12.—H. G. Gould, superintendent and manager of the Western Gypsum Co., is preparing to work the gypsum quarries owned by his company at Lovelock. The quarries extend over an area of more than 600 acres, and enough gypsum will be mined from them to keep the Reno plant running for years.

Disposition of gypsum in the United States, 1907–8, by uses, in short tons.

	1907.		1908.	
	Quantity.	Value.	Quantity.	Value.
Sold crude:				
For Portland cement	194,555	$355,750	187,680	$305,745
For paint material	(a)	(a)	1,281	1,300
For plaster material	a 36,061	66,597	29,516	77,860
As land plaster	46,851	115,841	37,972	91,833
For other purposes	1,950	1,880	7,484	11,630
Sold calcined:				
For dental plaster	11,648	24,394	174	636
As plaster of Paris, wall plaster, etc.	1,060,107	4,211,821	1,074,229	3,508,620
To glass factories	5,785	17,164	14,412	41,102
For Portland cement and other purposes	47,761	148,817	36,802	99,934
	1,404,698	4,942,264	1,389,550	4,138,560

a Included in "For plaster material."

Production of gypsum in the United States in 1907 and 1908, by States and uses, in short tons.

State.	No. of producers reporting.	Total mined.	Sold crude.		Sold crude, ground, as land plaster.		Sold as calcined plaster.		Total value.
			Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
1907.									
Alaska, Colorado, New Mexico, South Dakota, and Utah	9	96,389	13,349	$53,961	1,221	$4,884	72,872	$343,961	$402,806
California, Nevada, and Oregon	9	80,879	20,902	38,302	6,161	28,288	49,860	227,456	294,046
Iowa	7	251,874	17,272	24,837	1,562	4,278	162,965	701,268	730,383
Kansas	7	155,980	27,211	33,572	3,395	6,364	96,347	374,330	414,266
Michigan	6	317,261	35,543	56,681	15,500	23,981	197,666	600,689	681,351
New York	17	324,507	101,721	196,426	5,716	14,687	145,132	589,112	800,225
Ohio and Virginia	6	202,253	4,473	9,399	13,296	33,359	146,565	626,779	669,537
Oklahoma and Texas	11	282,461	11,075	11,049	.....	.....	223,254	813,568	824,617
Wyoming	4	40,144	.....	.....	.....	.....	30,640	125,033	125,033
	76	1,751,748	232,546	424,227	46,851	115,841	1,125,301	4,402,196	4,942,264
1908.									
Alaska, Arizona, Colorado, Idaho, New Mexico, South Dakota, and Utah	14	129,440	19,863	72,205	1,573	3,890	101,274	416,254	492,349
California, Nevada, and Oregon	14	93,794	3,282	8,935	4,195	17,151	64,775	345,652	371,738
Iowa	7	240,270	19,960	26,429	1,984	3,676	158,043	535,540	565,645
Kansas	7	130,184	24,064	27,047	3,162	5,679	80,522	248,613	281,339
Michigan	7	327,810	40,324	53,673	11,414	13,381	192,403	424,874	491,928
New York	18	318,046	96,146	171,747	5,712	14,255	160,930	574,757	760,759
Ohio and Virginia	4	178,904	9,260	19,988	9,682	33,591	125,167	426,426	480,005
Oklahoma and Texas	14	272,193	a 14,362	16,721	.....	.....	216,350	583,141	599,862
Wyoming	3	31,188	.....	.....	.....	.....	26,152	94,935	94,935
	88	1,721,829	226,261	396,745	37,672	91,623	1,125,617	3,650,192	4,138,560

a Includes a small quantity of ground material from Texas.

b Including paint material.

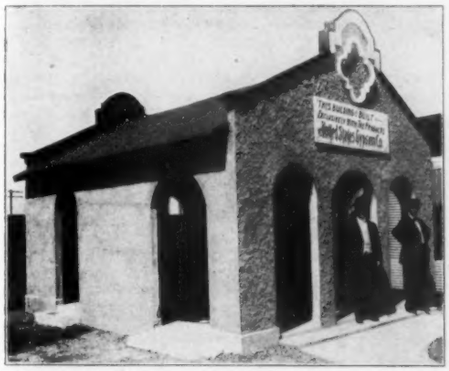
The Manufacture of Retarder.

The Ohio & Binns Retarder Co., of Port Clinton, Ohio, is capitalized for $100,000 and has a capacity of a carload of retarder daily. As the proportion of retarder used is only about five pounds for each ton of plaster, it can be seen that this daily output, requires the enormous daily output of 6,400 tons of plaster to keep these retarding mills busy. It also manufactures wood pulp, used for wood fiber plaster. The plant is fireproof, run by electric power and has been in operation continuously for seven years. It enjoys a large trade in this country and in Europe.

D. Binns, its vice-president, and F. S. Culver, its president, are credited with being the first men to make a standard retarder that could be guaranteed to the trade. P. K. Tadsen, the treasurer, stated that business had been good this year and increasing to a very marked degree since the middle of August.

House Made of Plaster.

The practicability of gypsum for building purposes is being demonstrated by the United States Gypsum Co. this season at the various state fairs where they have erected permanent buildings made entirely of their product. The one shown on this page is that built on the Oklahoma state fair grounds at Oklahoma City. The building has a concrete floor. The walls are suspended on gypsinite studding to which Sackett Plaster Board has been nailed, after which the various finishing coats manufactured by the U. S. Gypsum Co. were put on. The exterior is finished with slap and pebble dasher finish, showing the use



U. S. GYPSUM COMPANY'S PLASTER HOUSE AT OKLAHOMA STATE FAIR.

of Adamant as an exterior product. The demonstration at this place was in charge of Harry E. Reynolds and John L. Watson, who are both shown in the picture. They were on the job every minute of the time of the state fair and they were kept busy extolling the merits of gypsum products for this class of buildings. Chief Farrington, of the western sales division, looked in on the boys one day to help the good work along. Mr. Farrington is so busy these days that he hardly has time to more than visit in Minneapolis.

Looks For Big Business.

F. S. Griswold, general manager of the American Plaster Co., of Port Clinton, Ohio, when seen by a ROCK PRODUCTS man, said that they had had a good year's business. The last two months the demand for plaster had been greater than at any time during the existence of the company and he has stopped quoting old prices since September 1 on all orders coming in. Indications, he said, point to an extraordinary demand for plaster next year and the American Plaster Co. is now making preparations to meet the coming conditions.

Enlarge Gypsum Plant.

TACOMA, WASH., Oct. 15.—Work will be started in a short time on the enlargement of the plant of the Pacific Coast Gypsum Company. The plant will be extended 18 feet to the south and 20 feet to the east. This will give the company a third more output. New kettles will be installed and larger storage bins will be put in. W. R. Nichols is the manager.

The Meyer Silica Co., Chicago, Ill., has been incorporated with a capital stock of $5,000 to mine, produce and deal in silica, coal and minerals. H. V. Shepard, H. W. Lewis and W. E. Shepard, are the incorporators.

SAND AND GRAVEL

Standard Sand.

At the recent meeting of the American Society for Testing Materials, Richard L. Humphrey explained that arrangements had been effected whereby standard Ottawa sand would be provided at distributing stations in various parts of the country, and called attention to the importance of all laboratories using the same sand, so that the results of tests would be comparable one with another. Further, the arrangements made in reference to standard sand were such that the price would be low enough to make it available in every laboratory.

This sand has been adopted as the standard for its high quality. There are two companies producing this sand—the United States Silica Company and the Ottawa Silica Company. Both plants are at Ottawa, Ill., and well equipped to fill the requirements of laboratories.

Enterprising Southern Concern.

By acquiring certain interests in the Southern Gravel & Material Co., J. M. Dresser, of New Orleans, La., and George W. Neal, of Brookhaven, Miss., have been elected president and general manager, respectively, of the company. This company produces five different sizes of gravel, running from one-eighth of an inch to three inches in diameter, which it mixes in any proportion of sand and gravel required. It furnished the concrete mixture for the Audubon Building, in New Orleans, in which all the iron work was encased in concrete, the molds in some instances being only three-quarters of an inch from the girders. The company has made arrangements with the Illinois Central railroad to ship it a trainload of washed gravel and two trainloads of bank-run gravel per day. It is also delivering to the Mississippi Central railroad a trainload of bank-run gravel per day, besides shipping to New Orleans, Meridian, Greenwood, Yazoo City and Jackson. By reason of the adaptability of its material to road construction, the company proposes to inaugurate a good-roads department, using its bank-run gravel for capping the foundation, on top of which it will roll two or three inches of its washed gravel, using the largest size first and finishing with torpedo sand mixed with the washings from the plant. The company's main office is at 1027 Maison Blanche Bldg., New Orleans, La., and its plant is at Brookhaven, Miss.

Start New Machinery.

CAIRO, ILL., Oct. 19.—On September 25th the machinery of the Cairo Sand & Gravel Co. was started and ran satisfactorily. It was run at low pressure to get it "limbered up" but will be running at full blast soon. The machinery was put in under the direction of Superintendent Allen and the pumps are of his own design. Some important changes have been made in the plant as a whole, which will permit of its being operated much more economically than before. This is true especially with respect to the river plant where long lines of surplus steam piping have been taken out. It is expected that there will be a great saving in fuel, also that the pumps will resist cutting out by the sand much better than did the old ones. The capacity of the plant is expected to be nearly 1,000 cubic yards per day, at which rate the contracts with the Cairo & Thebes Railroad Co. will soon be disposed of.

Sale of Sand Plant.

CUMBERLAND, MD., Oct. 15.—The White Rock Sand Co.'s property between Oakland and Terra Alta, W. Va., has been sold to West Virginia and Pennsylvania capitalists for $150,000. It includes 300 acres of glass sand. It is understood a new company will be formed and a mill erected to carry on the work more extensively. The consideration was about $65,000.

The Waterloo Dredging Company.

WATERLOO, IA., Oct. 18.—The Waterloo Dredging Company recently began operations here for the purpose of reclaiming sand, gravel and crushed rock from the Cedar River bottom. A scoop is dipped into the river on a track and the material dredged. This car is then hoisted by a hoisting engine and cable up the track and dumps into a hopper. This drops the material into a car and it is hauled up the runway by cable and dropped into a hopper, which discharges onto a screen. The sand and gravel are sized and spouted into bins. The rock which cannot pass the screen is spouted into an Indiana Road Machine Company jaw crusher. It is then discharged into a bucket elevator and screened. The sized rock is spouted to the various bins. The bins are all high enough so that wagons can be driven under and loaded from the bottom of the bins. The sand for storage is piled to one side by a derrick and clam shell bucket.

Begin Work on Screening Plant.

LAWTON, OKLA., Oct. 16.—The preliminary work of installing the screening plant which is to furnish gravel for the construction of the fifty-four new buildings at Fort Sill began September 29.

Rebuilding Sand Plants.

BERKELEY SPRINGS, W. VA., Oct. 17.—The West Virginia Sand Co. is rebuilding the mill destroyed by fire several years ago and expects to have it in operation by the first of the year. The Millard sand mill of this place is also being erected as rapidly as possible.

Everhard Co. Busy.

The Everhard Company, producers of sand, grindstones and rock, are successors to Warthorst & Company and their plant is located at Massillon, O. The officers of this company are: H. H. Everhard, president and treasurer; M. McC. Everhard, vice-president; H. T. Yost, secretary.

PLANT OF EVERHARD & CO., MASSILLON, O.

They write us: "We have been operating our plant right along in spite of the hard times of the past two years, although we have felt the depression very keenly. We manufacture high grade silica sand for glass and steel moulding and also open hearth furnace purposes. It is in the latter product that we have suffered most, owing to the great slump in the steel business. At the present time business is looking up and we have closed several nice contracts, so now we feel that we will keep the plant running to its full capacity the remainder of the year.

"We also manufacture grindstones for spring and file grinding and are busy at present preparing our season's supply. The trade in this department is good. Our quarries have been in operation for over half a century. Under the management of our predecessors these quarries obtained a national reputation for grindstones.

"All things considered, we feel that we are on the eve of a business revival which we trust shall extend to all industries."

Find Deposit of Silica Sand.

PORTLAND, ORE., Oct. 15.—Pure silica sand in inexhaustible quantities has been found in the valley of Gordon Creek, near Elgin, Union County, eastern Oregon. The silica lode or vein has been traced for nearly two miles, has a breadth varying from 100 to 1,000 feet, and is of unknown depth.

J. W. Robinson, of Elgin, who became interested in the find about a year ago, has invented a process by which superior fireproof facing and ornamental brick have been made out of the silico. With a simple hand press and a crude kiln Mr. Robinson has succeeded in turning out brick of varying shades of color that are said to meet all the requirements of the best facing and ornamental brick used in the walls of the finest buildings put up in this country. Brick designed for fireproof purposes have been made from this sand, which successfully withstood the severest tests.

Lime

National Lime Manufacturers' Association

Meets Semi-Annually.

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EXECUTIVE COMMITTEE.

William E. Carson, ex-officio; Chas. Warner, Wilmington, Del.; T. E. Fleischer, Sheboygan, Wis.

The Rational Use of Lime.

By Lowell Rondebush.
Clermont County, O.

With the seeming difficulty of getting a stand of clover in many places and the emphasizing or rather the introduction of alfalfa east of the Rockies has developed a lime craze in many localities. We think there are about four reasons why clover does not do so well as it did years ago. First, in general terms, the soil is not as rich, especially in humus content, for most legumes require an abundance of available nitrogen. Second, we don't give it a square deal, always using a nurse crop which takes the moisture and available plant food and the clover is thus a weakling. Third, the multiplication of insect pests and fungus diseases. Fourth, the acidity of the soil, or rather the absence of sufficient carbonate of lime in the soil, as it takes about thirty-seven pounds of lime to each ton of red clover, and closely connected may be the toxic excreta of the clover, which I sometimes think produces the so-called clover sickness, as it invariably has been found in short rotations where clover appeared every third year.

Lime is an indirect plant food, hence is essential—just as essential to the maximum production of some crops as direct plant food. The carbonate is the form to be most desired, yet in this form it is very soluble, approaching in a degree to the nitrogen in nitrate of soda. Water from wells in a limestone formation, as seen in the residue on the inside of the tea kettle or effect on soap, is a living witness.

One of the effects of caustic lime is to liberate nitrogen by decomposing the humus (raw does not have that effect). Another is to increase the amount of available potash. These two elements the clover must have, as well as adding the lime content. It is readily seen that acidity of the soil of itself may not be the cause of minimum yields, but it is well to bear in mind that in an acid soil that the clover bacteria will not live; hence, of all crops, it levies the heaviest tax on the available nitrogen of the soil. Again, even some legumes, and not a few others not legumes, do best in an acid soil.

So far in this general discussion we have said nothing about the craze. What is it, you ask? That lime, caustic lime, is a panacea for exhausted, out of balance soil. That weeds, insect pests, and fungus diseases can be annihilated. Without going into detail, the use of caustic (burned limestone) lime in large quantities is both dangerous directly and indirectly, and expensive. That its rational use is in carefully experimenting with minimum quantities. The more humus your soil contains, the more caustic lime you can use. We think each pound of caustic lime, 98 per cent pure, decomposes about one and one-half pounds of humus.

Again, the craze is in the use of caustic lime at all where you can get raw limestone at anything like reasonable prices. When you burn raw limestone you lose 44 per cent in weight and add the caustic, the dangerous principle. Raw limestone should be used in larger quantities, as you have, air-dried, only 1,120 pounds in a ton. Again, it should be as finely ground as possible. Twenty-five thousand pounds of raw limestone per acre would do no harm—it is a natural product—but that would be expensive and unnecessary. Lime will sweeten acid soils; make more nitrogen and potash available; will add lime to enable clover to produce maximum growth; it will not kill weeds such as sorrel nor insects, nor prevent fungus diseases. It helps eradicate the scab in potatoes. All in all, lime will do your soil good if rationally used. —Wallace's Farmer.

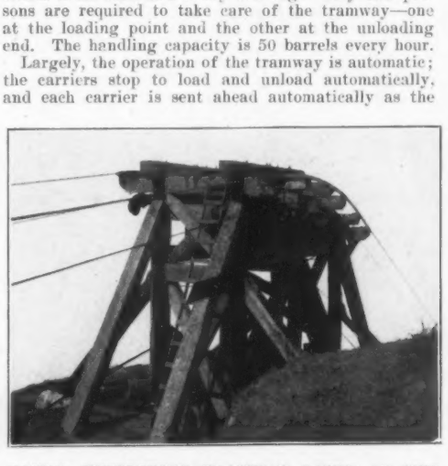
Greater Demand For Hydrate.

The National Mortar & Supply Co., of Gibsonburg, Ohio, manufactures the famous Banner Hydrate. It has doubled its output of lime since last August. F. J. Wertelenski, superintendent of this plant, said that the fore part of this year it operated five lime kilns and is now operating ten. The last kiln was started in September. It is chiefly a hydrating plant. H. R. Zorn, assistant superintendent, said: "We have found strong indications that hydrate is fast supplanting lump lime, which accounts in some degree for the increased demand for our product, which has kept us hustling the last two months to fill orders."

Automatic Tramway at Lime Plant.

A steel-cable electrically operated overhead tramway has very recently been installed at the big lime plant of the Monterey Lime Co. This plant is located about forty miles below old Monterey, and nearly three miles from ocean navigation. The tramway differs in some respects from any other now in use. This is used to convey the lime output from the plant down to tide water, and the line passes over a very rough country. There is, in one place, a span of 2,600 feet and a number of others from 800 to 1,000 feet. The tramway handles lime in barrels—two barrels to each carrier. These barrels are enclosed in the carriers so that they are entirely protected from rain and heavy sea fog. Only two persons are required to take care of the tramway—one at the loading point and the other at the unloading end. The handling capacity is 50 barrels every hour.

Largely, the operation of the tramway is automatic; the carriers stop to load and unload automatically, and each carrier is sent ahead automatically as the



TOWER SUPPORTING TRAMWAY CABLE AT THE MONTEREY LIME PLANT.

next one drops in to take its place. The total cost of installing this tramway was about $12,000. Formerly all the lime output was hauled down to tide water by teams over a very rough mountain road—a slow, and very expensive method of transportation. In actual length the tramway is about 2½ miles. The lime company has found a wonderful saving of time and money by the use of this tramway.

Ohio & Western Co's., Big Plants.

The Ohio & Western Lime Co. has two plants in Fostoria, Plant No. 1 and Plant No. 9. The last is the old Lloyd plant and is said to produce one of the best limes in the country. It has had this reputation for the last forty years. The company is said to have the most complete shipping facilities in the country, including switch tracks running into the plants from the Hocking Valley railroad and the T. & O. C. railway, which also tap the B. & O., L. E. & W. and the Nickel Plate railroads. Further it can use two electric lines, the Tiffin, Fostoria & Eastern and the Toledo, Fostoria & Findlay.

In connection with its lime plants, it has a stone crushing plant, with a capacity of 100 yards of crushed stone a day. The daily output of these two plants is 1,200 bushels of lime. The crushed stone is used for concrete and paving purposes.

This concern was the first in the country to manufacture a lime fertilizer nine years ago and its daily output is now about thirty tons of this fertilizer, which is made at plant No. 1.

Lee Bevington, superintendent of these two plants for the past year and a half, was with the Seneca Lime Co. ten years and helped to build the plant. The company has a large retail trade, farmers coming from a distance of three to ten miles to buy its lime.

Mr. Bevington says that since the first day of August they have been nearly swamped with orders and are running their plants at full capacity. He is under the impression that the outlook for the future is exceedingly bright.

Tiffin Lime & Stone Company.

The Tiffin Lime & Stone Co.'s Highland quarry and lime kilns are at Sharon avenue. The plant consists of a stone crusher with an output of 200 yards of stone a day, and two kilns with an output of 800 bushels a day. The company owns eighteen acres of quarry land, containing limestone twenty feet in depth and underneath that a blue rock which is extensively used for road purposes and sidewalks. The down-town office is located at 67 West Market street. It retails lime in bulk, in barrel and ground lime, its trade extending over a radius of ten miles. It also handles Edison Portland cement, selling much of it to farmers. C. Babcock is president and Jesse Miller secretary and treasurer of this company. George Weott holds a controlling interest.

The quarries were first opened and operated ten years ago. The lime kilns were built last January.

N. A. Siebenaller, manager of the company, owns a crushed stone plant near Tiffin under the name of the Bascom Stone Co., Weott, Miller & Siebenaller, proprietors. The capacity of the stone crusher on this latter plant is 400 yards of stone in ten hours. The Bascom Stone Co. owns twelve acres of quarry land containing good solid blue rock stone for building and road paving purposes.

Evans Lime Co., Is Busy.

Dan Evans, of the John Evans Lime & Stone Co., of Marion, Ohio, say: "Business has been exceedingly dull with us this season, more so than in any other year in all our business career. We were operating only three kilns out of the six we have. About the first of August conditions changed without any warning. Orders came piling in and we started up the other three kilns and ran all six at our full capacity, and are still keeping up that gait but it is nip and tuck not to get behind with the orders which keep coming. We would enlarge our capacity but can not get the men. No use talking, the first splashes of the wave of prosperity have been unmistakably felt by us."

Large Demand For Agricultural Lime.

W. M. Stone, superintendent of the Ohio & Western Lime Co.'s plant at Gibsonburg, Ohio, in speaking of the marked increased demand for lime in the last sixty days, said: "Four months ago we were operating four lime kilns; today we are operating nine and would operate ten if we had the hydrating capacity. In regard to agricultural lime used as a fertilizer, this year has been an exceptionally good one. We turned down orders for five hundred tons of agricultural lime in August and September of this year. Lime companies throughout the country have asked us to fill orders for them, but it was impossible to take care of them. Since August we have been obliged to run this plant from 6 o'clock in the morning until 9 o'clock in the evening. Further, it has been impossible to get as many men as we need to supply the unusual demand for lime that has been made upon us in the last sixty days."

Let Contract For Lime Plant.

The Tidewater Portland Cement Co., main office 115 Broadway, New York, plant located at Union Bridge, Md., forty-five miles from the city of Baltimore, has awarded a contract to the Fuller Engineering Co. to design and construct a large lime plant, to be built in connection with their new 3,000-barrel Portland cement plant. The plans are now being prepared and construction work will commence immediately.

Change in Management of Lime Plant.

Terra Alta, W. Va., Oct. 10.—C. A. Miller, cashier of the First National bank, has bought from W. M. Bishop, a half interest in the lime plant near here and the business from now on will be known as the Terra Alta Lime Co. It is the intention of the owners to gradually increase the capacity of the plant. Two large kilns are now running all the time and orders have been received which will keep them busy for months.

The company owns a vast limestone ledge practically underlying a tract of more than fifty acres. Modern equipment has been installed, including steam crushers and steam drills, elevators to carry the finished product away, convenient storage room and scales, etc. The lime is sacked ready for shipment with very little hand labor.

The New Creek Lime Co., of New Creek, W. Va., has been incorporated by E. E. Fout, S. V. Ward, J. S. Ward, T. F. Ward, of New Creek; E. P. Stehley and J. C. Watson, of Keyser, W. Va. Capital stock $5,000.

QUARRIES

NEW OHIO PLANT.

Rock Crusher at Osborne Pronounced by Experts to be One of the Best in the Country.

SPRINGFIELD, O., Oct. 19.—In addition to dealing in coal and ice, the Springfield Coal & Ice Co. is the largest handler of builders' supplies in this section. It does an immense business and sells all the leading brands of cements, plasters, lime and sewer pipe. It is busy all the time and Herman Voges, the secretary and manager, says the business of the present year has been larger in volume than usual. This business was started in 1882 and has never failed to pay annual dividends to its stockholders. It is capitalized for $150,000 and numbers among its stockholders and directors some of the most prominent citizens of the city, most of them being very wealthy men. Its officers are: W. S. Wilson, president; George B. Glessner, vice-president, and Herman Voges, secretary and manager. The office and yards are very conveniently located and possess the advantage of being on the main line of the Big Four railroad, affording excellent transportation facilities.

The company has lately embarked in a new enterprise, which is, however, right in line with its builders' supply business. It has purchased thirty-three acres of fine limestone property, near Osborne, Ohio, which is not far from Springfield, and is also on the Big Four railroad. Here the company has erected one of the most modern crushing plants in the entire country and the product is already meeting with a ready sale on account of its superior quality. This property contains as high grade limestone as can be found in the state. Analyses show it to be from 96 to 98 per cent carbonate of calcium and an especially desirable material for fluxing, as tests have demonstrated. There is practically an unlimited amount of stone; in fact, core drillings have been made to the depth of 190 feet without touching the bottom of the ledge.

The face of the opening is on the side of a hill, and remarkably easy of access. Very little stripping has been necessary, the stone being good and sound to the very surface in some place. While the quarry face has been opened only to the depth of some twelve or fifteen feet, it would seem to indicate that the stone will prove to be almost a solid formation the further in they go. Two Ingersoll-Rand drills are at present in operation propelled by compressed air. More will be added as soon as the quarry is further developed. The blasting is done with dynamite. Operations were only begun the first of the month, but already from five to eight cars are being taken out per day, which will be increased until the full capacity of the plant, which will be about 700 tons per day, is reached.

In the construction of the plant, due consideration was given to the fact that the quarry is favorably located on a hillside, and all the stone is conveyed by Austin end dump cars by gravity to the crushers. The plant was designed and erected under the supervision of J. H. McKee, chief engineer of the Austin Manufacturing Co., of Chicago. It has been pronounced by experts to be one of the best arranged and most up-to-date plants in the country for its capacity. The cars are operated on tracks by a cable and drum, a loaded car being run down over the elevated runway to the crusher while an empty one is returning to the quarry. The cars dump directly into the No. 7½ Austin crusher, after which the crushed rock is elevated by a pocket conveyor to the revolving screen in the top of the building. The oversize material from the screen is then spouted by a chute to the Austin No. 5 crusher, after which it is again elevated and screened and then discharged into the sizing bins.

In constructing this plant no expense was spared. The foundations and floors are all of solid concrete and the superstructure is entirely of new material. No old material or machinery has been used anywhere in the construction of the plant. It took four months to build it, so that the most substantial work was done. The building, which is 70 feet in height, has four floors, the second of which is the crusher floor. This crusher room is forty feet square, while the floor above is the same. The top floor contains the screens. The bins are on solid concrete foundations, over twenty feet high, and six feet wide at the base. All the floors are of concrete, including those in the engine and boiler room. They have storage capacity for four hundred tons and two cars can be loaded at once, as one track is directly under the bin while the other parallels it. The material is loaded into the car by a gravity chute.

The engine room is 40'x30' and contains a Taylor 125 h. p engine and an Ingersoll-Rand air compressor of 80 h. p. The boiler room adjoining contains two tubular boilers of 125 h. p. each, made by the Gem City Boiler Co., of Dayton, O., and fitted with flue blowers, a unique device for cleaning the boilers quickly and economically. A water heater is also a part of the equipment worthy of mention. All the exhaust steam passes through this, heating the water, so that when it runs into the boilers it has already reached a heat of 180 or 190 degrees, which means a great saving in fuel.

The water supply comes from a nearby spring and is pumped by a Laidlaw-Dunn-Gordon pump into a reservoir. Every part of the building is piped, including the engine and boiler room, affording complete fire protection.

Up to date the output has found a ready market; in fact the company has been pushed to its utmost capacity to meet the demand and has the entire output sold for a month to come. Crushed rock is furnished in sizes from ⅞ inch to 3½ inches. On account of the high grade of the material, it will, no doubt, continue to find a ready sale for fluxing purposes, as well as for macadam roadways, for which it is well adapted on account of its hardness. Some samples have been polished, showing a close resemblance to the well known Tennessee marble. While the plant was constructed on plans furnished by the Austin Manufacturing Co., no little credit is due Herman Voges, the secretary and manager of the company, who has personally superintended the building of the plant. Mr. Voges studied many of the best plants in the country and was able to coöperate with the Austin people to good advantage.

The Dittlinger Lime Co., of New Braunfels, Tex., is installing a complete crushing plant of five hundred yards capacity. It is a Symonds outfit.

Makers of Good Roads to Meet.

Members of the American Road Makers' Association will hold their next annual convention at Columbus, O., October 26, 27 and 28. The association has as its head the various state highway commissioners and its membership is made up of officials and contractors engaged in street and road construction. In the past these gatherings have been the most notable of the good-roads gatherings, and indications point to a larger attendance at this meeting than at any previous session of the association.

In connection with this meeting there will be an exhibition of road and streetmaking machinery and materials, while many demonstrations will be made in the meantime. Quite a number of brick manufacturers are interested and brick-road contractors will attend from all parts of the country.

It is possible that the meeting will be held in the Board of Trade auditorium, and that exhibits will be in the Goodale street auditorium. This program, however, may be changed before the time of the convention.

Quarries Affected By Referee's Report.

BUFFALO, N. Y., Oct. 13.—The lease and bill of sale of the Medina Quarry Co. to the Orleans County Quarry Co. was declared void by Daniel J. Kenefick in a report filed on September 28. The action involves more than $1,000,000 worth of property and a number of minor matters are passed on in the referee's report. All stone quarries in Orleans and Niagara counties are affected by the decision.

Big Blast In Quarry.

FOND DU LAC, WIS., Oct. 18.—One of the biggest blasts ever fired in this section of the state was recently fired at the quarries of the Union Lime Co. at Marblehead. Eleven holes, seventy-three feet deep, were blasted and four tons of dynamite dischargd by a battery. A ledge twenty feet wide and nearly 200 feet deep and long was hurled in the air. Enough stone was furnished to run the lime kilns for six months.

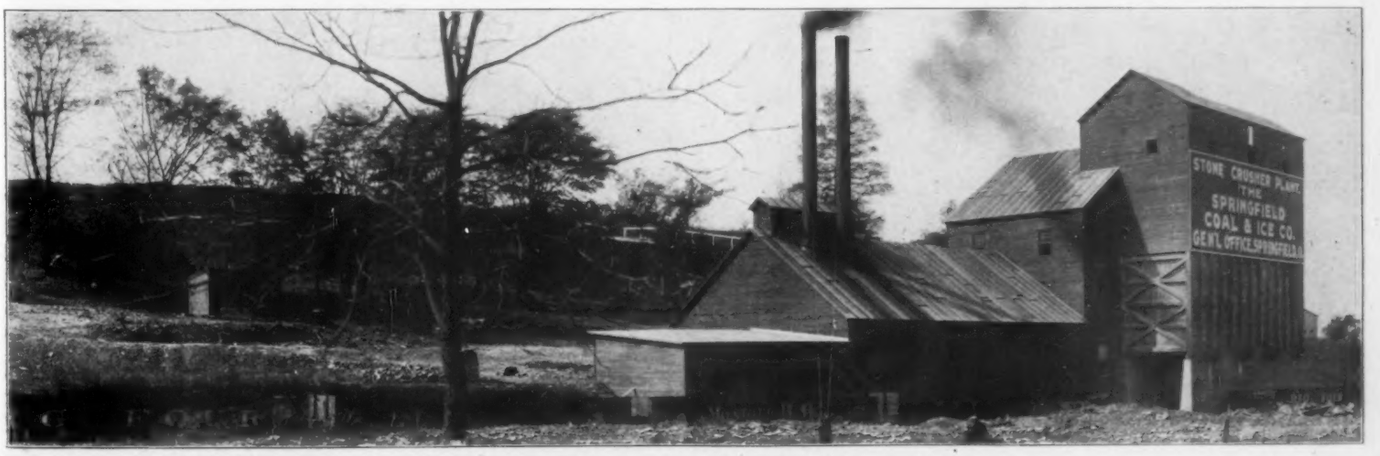
N. R. France & Sons has recently installed a new crushing plant in Detroit, for the purpose of crushing furnace slag, etc.

W. F. Woodruff, Louisville, Ky., has just completed his new crushing plant and started operation. The capacity is stated at 1,000 yards per day. It is equipped with Symonds crushers.

The Casparis Stone Co., of Columbus, Ohio, is opening extensive quarries at Havre de Grace, Md., and Patterson Creek, W. Va. It has taken a long term contract to ballast the B. & O. from Baltimore to Pittsburg.

Logansport Stone & Construction Co., at Logansport, Ind., has started its crushing operations at what is known as the old Keeport lime quarry. It has a fine grade of limestone of the high calcium type in crystalline formation.

The new crushing plant of the Ohio & Indiana Stone Co. at Greencastle, Ind., has just begun operations. It is another unit of N. R. France & Sons' extensive crusher operations. The equipment consists of three Gates crushers, with the usual elevators and screens, etc. Allis-Chalmers Co., Milwaukee, Wis., installed the entire plant.



CRUSHER PLANT OF THE SPRINGFIELD COAL & ICE COMPANY, OSBORNE, OHIO.

DYNALITE.

A Visit to the Home of the New Explosive—History of Its Birth and Growth.

A day recently spent at the picturesque home of "Dynalite" by a representative of ROCK PRODUCTS was full of interest as well as surprises. He climbed up gently sloping and thickly wooded hills and ridges, over which the many small buildings of the plant are scattered, and tramped over a goodly part of the forty acre tract which practically is isolated from the world. He enjoyed every minute the refreshing autumn breezes and the beauty of the natural landscape, although footsore and tired at the end of the day.

He has truthfully set down the things he saw there which made his heart beat faster and which will particularly interest those who use high explosives.

When the site for the mills of the American Dynalite Co. was chosen two years ago, and its location became known to be about 1½ miles east of Amherst, Ohio, the peaceful countryside in Lorain county developed a militant spirit, protesting against the establishment of mills which, in its prejudiced state, were asserted to be a menace to life and property for miles around.

The land on which the plant stands is hilly and thickly wooded, containing forty acres of ground. Its location is ideal on account of its shipping facilities, a switch track from the Lake Shore railway running within 100 feet of the magazine, where the explosive is stored in cases, ready for shipment. Part of the thirty buildings of the plant stand on the brow of the ridge, and others lower down, scattered over an area of several acres. All these buildings have a space of ground between them of 100 or more feet.

The method of making dynalite is a simple one. In the mixing house, the ingredients in proper proportions are assembled and thrown into a large revolving mixer, where they are thoroughly incorporated in one mass. From here they are taken to the grinding building where this mixture is first passed through a screen and then between soft rubber rollers, which reduce it to the required fineness ready for loading the paraffine tubes.

Girls are employed in the plant, making these tubes by hand. When done, the tubes are placed in wire cages and taken to the paraffine house, where they are dipped in a paraffine solution, for the purpose of waterproofing the cartridges. They are next distributed to the loading huts, where girls load the cartridges with dynalite, close the end of the tubes and they are ready for shipment.

All of the machinery used on the grounds, making dynalite, was invented by and installed under the supervision of F. H. Briggs, the inventor. The buildings on the grounds are protected from fire by a system of water pipes and fire hose, running within ten feet of each building, and these pipes are connected with the pumping engine which forces water through the pipes at high pressure.

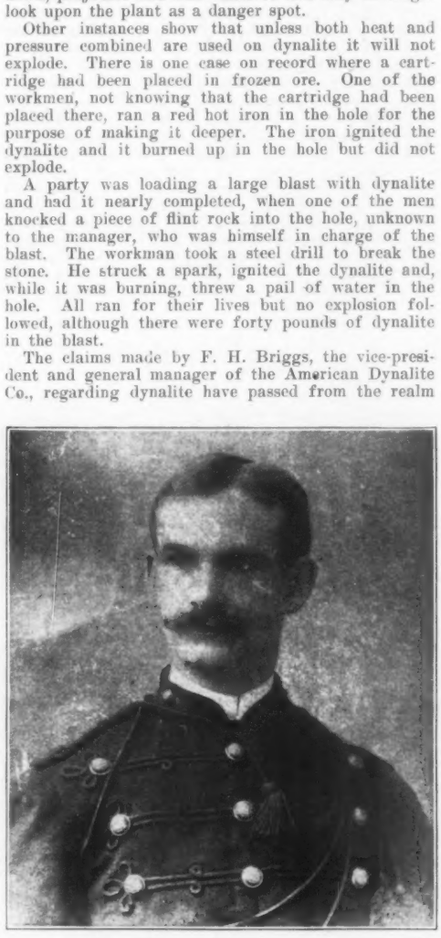
A gas well on the grounds, with strong pressure, furnishes gas for the engines, heat for the buildings, and for large arc lamps and a searchlight, illuminating the grounds at night. The plant is at all times under guard of keen-eyed watchmen and a system of passes makes it impossible for a stranger to enter the grounds without permission. Woe, indeed, to the prowler with evil intent at night, for he takes the chance of being shot and questioned afterward.

A fire a year ago in June destroyed a large building, which contained two tons of dynalite, and a month later fire destroyed three buildings, containing four tons of dynalite. Some of this was in open cans, some in boxes packed and ready for shipment and some in torpedo tubes with tops screwed on. All this merely added to the fierceness of the flames, but caused no explosion. These fires at the time of their occurrence sent the people for miles scurrying for a place of safety. They believed the calamity they feared had come. Soon afterward the people quieted down, prejudice and fear vanished and they no longer look upon the plant as a danger spot.

Other instances show that unless both heat and pressure combined are used on dynalite it will not explode. There is one case on record where a cartridge had been placed in frozen ore. One of the workmen, not knowing that the cartridge had been placed there, ran a red hot iron in the hole for the purpose of making it deeper. The iron ignited the dynalite and it burned up in the hole but did not explode.

A party was loading a large blast with dynalite and had it nearly completed, when one of the men knocked a piece of flint rock into the hole, unknown to the manager, who was himself in charge of the blast. The workman took a steel drill to break the stone. He struck a spark, ignited the dynalite and, while it was burning, threw a pail of water in the hole. All ran for their lives but no explosion followed, although there were forty pounds of dynalite in the blast.

The claims made by F. H. Briggs, the vice-president and general manager of the American Dynalite Co., regarding dynalite have passed from the realm



F. H. BRIGGS, AMHERST, O., INVENTOR OF DYNALITE.

of uncertainty to an everyday matter-of-fact certainty, proved by the accidents, mishaps and careless handling of dynalite during the past three years. Mr. Briggs originally started manufacturing dynalite three years ago in a plant located between Painesville and Fairport, Ohio, where he made 200 pounds a day. After forming the present company, with George H. Worthington as president, and F. N. Bendelari secretary and treasurer, two years ago, the present plant with an output of ten tons daily and capacity to ship dynalite in carload lots, was erected.

Mr. Briggs has secured one of the most intelligent, best disciplined and trained force of employes working in mills, manufacturing sensitive and dangerous explosives. In R. H. Allyn, his superintendent, he has an efficient aid. The latter's brother, T. N. Allyn, is the chief demonstrator of the company. His duties have required him to face the prejudices of a biased public, hard to endure for the time, but now passed. His confidence in dynalite has been unlimited.

For the first two years Mr. Briggs had a hard fight for success but he made it and has now the gratification of seeing his hopes realized in having dynalite used in quarries and mines throughout the country. At present the company is shipping large quantities into Ohio, Michigan, Pennsylvania and Illinois.

During the first and second years of their appearance their traveling salesmen ran up against false stories, which made it hard for them to effect sales, dynalite not being known. When this matter was brought to the attention of Mr. Worthington, president of the company, and a well-known Cleveland capitalist, identified with dozens of successful enterprises, it is said he replied, in his quiet, characteristic way: "Well, if these fellows have money to waste fighting us, the American Dynalite Co. has money to spend to fight for success."

Mr. Briggs has a most direct way of convincing people that his claims regarding dynalite are absolutely within the limits of truth. For instance, he takes a visitor through the mills, he shows him all there is to be seen there. Then he does some things which makes the visitor's knees tremble and his heart beat faster. He takes a loaded tube of dynalite, lights it with a match and holds it aloft like a Roman candle and, while burning brightly, hurls it against a tree. "You see," he says, "it doesn't explode." He inserts a fulminating mercury cap into the loaded tube, attaches a fuse, places another cartridge six inches distant, lights the fuse, retires with his visitor to a safe distance and watches results. A loud detonation, an upheaval of rock and dirt, the cartridge placed beside the one exploded is hurled 50 feet or more from the spot, but the concussion and the shock had left it whole. He demonstrates that it is a nonsympathetic explosive, by pouring a string of dynalite on a rock, taking a hammer and striking it. Only the dynalite grains directly under the blow of the hammer explode, making a noise like a percussion cap. The dynalite grains near those exploded are not disturbed. People using explosives are beginning to realize that dynalite is not dangerous, and wherever prejudice existed it is giving way to a better knowledge of this high and practically safe explosive.

After three years of practical use dynalite has confirmed the claims of its inventor and the company now aims to broaden the field of its operations by the establishment of more magazines and more mills in various locations, until dynalite has been placed within the reach of all consumers of high explosives in the United States.

BUILDINGS OF THE AMERICAN DYNALITE COMPANY, NEAR AMHERST, O.

New Crusher Plant at Lucky, Ohio.

One of the most modern crushed stone plants in the country was recently completed at Lucky, Ohio, by Thomas Doherty, of Cleveland. Throughout, concrete foundations and concrete floors have been put in, in all its buildings. A Gates crusher with a capacity of crushing fifteen tons of stone per hour has been installed and is run by electric power. Compressed air is used in operating all the drills. A unique feature of this plant is that in it there are no fires, no boilers, no engines——all of its machinery is driven by electricity.

It is located on the Ohio Central railroad, and the Toledo, Findlay and Fostoria electric road, which runs through the grounds of the plant. These two roads provide for the best of shipping facilities for the product of the plant.

Mr. Doherty states that business has been very good this year, and the increased demand for crushed stone in the last sixty days gives indications that business the coming year will start off with a rush.

Carnegie Steel Co., Operating Quarry.

In the August 22 issue of ROCK PRODUCTS, on page 22, the statement was made that the Woodruff & Pausch Stone Co., had taken over the Columbus quarry of the Carnegie Steel Co. and was operating it. B. H. Taylor of the Carnegie Steel Co. advises us that the latter company is operating its own quarry and expects to continue to do so.

NEW CRUSHER PLANT

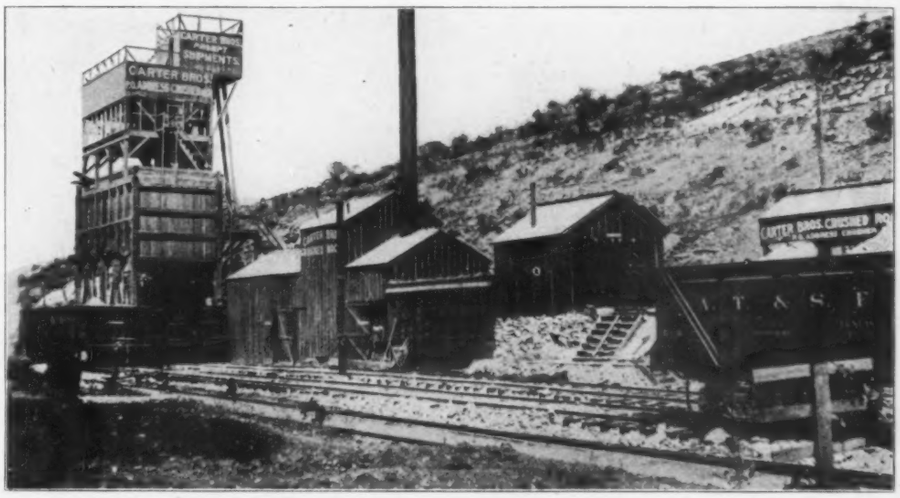
Carter Bros. Begin Operations at Crusher, Okla. —Work Embraces Original Features in Design and Construction.

One of the latest crushed rock plants to begin operations in the state of Oklahoma is that of Carter Brothers, located at Crusher, on the Gulf, Colorado & Santa Fe railroad, eighty miles south of Oklahoma City, and fifteen miles north of Ardmore. The firm is composed of H. B. Carter and Dorset Carter. The former is manager of the company, and under his direction the plant has been erected. Work was commenced at this place in April of this year and the plant was completed on October 1st. The plan of Carter Brothers was to make this plant strictly a commercial proposition and they intend to sell their product to users of crushed rock for macadam and concrete purposes. Situated as it is, the plant was designed especially for a side hill proposition and necessarily had to be made compact in order to be located in the position it occupies. With this in view the T. L. Smith Co., of Chicago, prepared the plans. The crusher openings are set at the level of the platform on which the cars are run and at the same level as the quarry floor. The crushers are set side by side, the larger type set for coarse work and the smaller one for fine reduction. This enables both crushers to be run in conjunction and at the same time if an order is secured for finer crushing the quarry cars may be dumped directly into the smaller crusher, so that only one reduction will be necessary.

The company owns sixty acres of stone land and is working into the side of the mountain. Already it has a face opened with the track laid. In the quarry there are two Sullivan steam drills, one Ingersoll-Rand steam drill and two Sullivan air drills.

After the rock is shot from the ledge it is loaded into quarry cars of two-yard capacity and hauled to the crushers. These comprise one No. 6 and one No. 5 Symons gyratory. The rock, after passing through the crushers drops into a steel hopper which discharges it into a No. 6 bucket elevator 45′ long with 12″ center buckets. It is conveyed to the tower by this elevator and discharged into a 40″ by 12′ revolving screen and screened into four sizes. The rejections over 2″ ring are spouted into the No. 5 crusher and thus reduced, elevated and screened again. The stone from the screens drops into four sizing bins which contain separate compartments for 2″, 1½″ and ½″ and screenings or chats. These bins have a capacity of 400 yards and preparations are being made to double this capacity by building another set.

The arrangement of the storage is such as to allow cars to be run under the bins and the cars filled with the rock by gravity. There are two separate tracks into the plant so that two cars may be loaded from the one bin at the same time.



GENERAL VIEW OF CARTER BROTHERS' PLANT AT CRUSHER, OKLA.

The power of the plant is furnished by a 125-horsepower Atlas engine and 200-horsepower Erie boiler. The engine house is immediately to the south of the crusher plant and the blacksmith shop is to the south of this building.

The R. J. Clark Coal Co., of Oklahoma City, is selling agent for the company. There is a large demand for crushed rock in Oklahoma and the company has booked a number of orders for its product.

Demand Is Always For More.

There may be a limit to the amount of crushed rock that can find a ready sale in road and street improvements, in concrete work of every character, but no man living now can tell when it will be reached. Nearly a decade ago, when ROCK PRODUCTS first began to agitate the importance of this material, it was, comparatively speaking, a small branch of the quarry business. At that time, the lime burners adjacent to the larger cities would crush an insignificant amount of rock to use in driveways, barn floors and the bottoms of subcellars. Then there was the railroad ballast plant, grinding away day by day, upon the basis of short wages, and sometimes scarcely that. The big steel mills operated a few fluxing quarries by contract, and here and there could be found a man plodding along at trying to interest county commissioners in road improvements, so as to get some work for his little crusher. But most of the time these plants were waiting for orders or crippled in one way or another.

There has been a mighty change. Today the output of crushed rock for all purposes is four times what it was ten years ago, and every day we hear of larger crushers and new plants going into commission.

The opinions of engineers upon specifications for crusher products has turned around completely in the last ten years. For years there was a delusion that the fine particles resulting from the crushing process must be considered as waste. Practically all specifications were drawn in this way, and the first introduction of the separating screen was for the purpose of extracting this waste. With the mighty onrush of research in connection with the concrete industry it was found that the long established ideas with regard to aggregate materials were all wrong, and actually "the stone which the builders rejected has become the head of the corner."

The crushed rock industry has really kept pace with the growth of the importance of concrete, but the men who operate the plants have not received their share of the profits of the expansion. Either they were slow to believe that any good plums could reach them, or they preferred to renew those old ruinous contracts and grind on at ballast on the low wages scale of doing business.

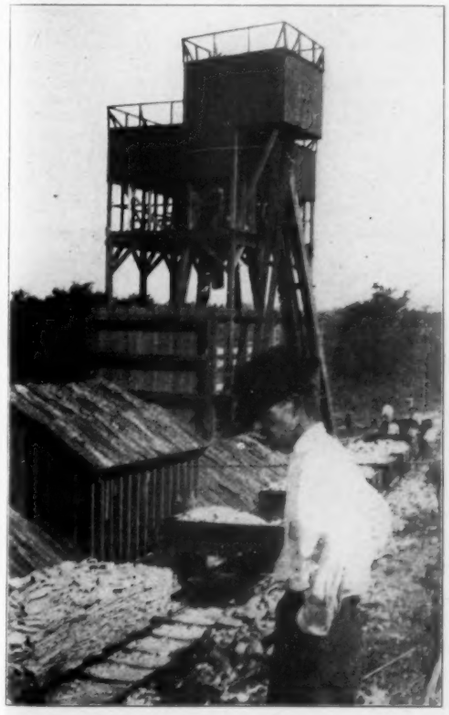
Automobiling has recently given the top dressing with fine screenings a severe bump in road work. Government and state experts are working on the improvement of specifications to meet the new conditions, and then there will be a greater demand for crushed rock than ever before, for it is next to a certainty that the result will be some kind of crusher product for the new top dressing in conjunction with cement or asphalt or tar, or possibly two of these together. Meanwhile we are industriously working on new uses for the fine screenings which are sure to once more come into large oversupply.

Limitation of transportation on account of great tonnage and low value to a considerable extent confines the crusher business to a local proposition. But there are things for the crusher operator to study out which will enlarge the scope of his operations, and give him a larger territory to serve with high-priced products from his plant beside the quarry.

Engineering achievements in connection with the crusher plant are stupendous to contemplate. Crushers more than 40′ across the feeding throat have been introduced that will chew up chunks of rock as big as a grand piano. Just what real economies these tremendous units will develop is as yet to an extent problematical, and it may take a long time to get all the factors adjusted and regulated, but the very fact that such gigantic machines are being put on trial indicates that there are still great things to be expected in the crusher engineering line, and the limit of size of the crushing machine may not yet have been reached.

Ask Receiver For Quarries.

CLEVELAND, O., Oct. 15.—A receiver was asked for the Amherst Quarries Co. on September 28, in the United States district court. The liabilities as given out are $200,000 and the assets $300,000.



CARS FROM QUARRY DELIVERING ROCK TO CRUSHERS AT CARTER BROTHERS' PLANT.

METHOD OF DELIVERING ROCK TO CRUSHERS AT CARTER BROTHERS' PLANT.

SAND-LIME BRICK

As to the National Association.

As the time approaches for the next annual convention of the National Association of Manufacturers of Sand Lime Products the interest in that occasion naturally increases. The dates for the meeting will be December 6 and 7, but the place for holding the convention cannot at this time be determined. It will be announced in the near future, and will be in the city most convenient to the greatest number of members.

The progress report of the joint committee on testing of brick has proved to be of great interest to all the members in good standing who have received the same. A program of practical subjects is now being arranged, and the suggestions of the membership, or any other manufacturer of sand lime brick, will be cordially received by the secretary.

On account of the exceptionally large growth of the business during the present year and the consequent increased influence of the industry, the need for the association and its co-operative power is greater than ever before. We hope to have the representatives of all the new plants with us at the coming convention, as well as those that have dropped out on account of the long, toilsome work that the committees of the association have been forced to undertake and bring to completion. The association at last is firmly established as a body that does things.

Send suggestions for program and applications for membership to Fred K. Irvine, secretary, 355 Dearborn St., Chicago, Ill. Do it now, it is worth while.

Enterprise In the Southern Field.

The Savannah Brick Works, Savannah, Ga., have issued a very attractive and artistic folder to architects, contractors and other individuals. It is printed in colors on calendered paper with rough edge. This little folder sets forth in convincing manner the merits of sand lime brick as a building material. It says:

The sand brick industry is new in America and of small proportions. Fifty thousand brick a day means a big plant. In Germany, its home, it has developed enormously. A single plant in Berlin has a daily capacity of 350,000 bricks. German standards for building materials are high, and all they use are of the best. Sand brick must be in this class or they would not use it. And they do use it.

It is coming in too, here in America. It has been already used in New York, Philadelphia, Washington, Chicago, Denver, Detroit, San Francisco, Birmingham, Jacksonville and a long list of other cities. Its quality is established by official tests. Its price speaks for itself.

June 26, 1909, at Columbia University Laboratories, New York, Prof. Ira H. Woolson tested several Savannah sand brick. His official report puts the average resistance to compression at over 5,400 pounds per square inch, or over 80 tons to a brick.

This is more than twice as high as the rigid requirements of the New York Building Department. Ask other manufacturers to have their product put through such a test and then tell you the result. They will probably say "It isn't worth while!" Doubtless it isn't—from their standpoint.

America has profited in the past by adopting Germany's proved successes in building material. See the size of the interlocking roofing tile industry today. It was practically started here in 1893, under German auspices. Equal success is now in sight for sand lime brick.

Perhaps you have read hastily and recognize no definite impression. Then do read again. An impression is there for you. Only be sure you get the right one. You will know it by your immediate resolution to give our brick consideration, on its merits, for your next building operation. This is all we ask.

To facilitate such consideration, let us send you samples. Hoping and aiming to serve both you and ourselves.

A recent test of the product of this company at the testing laboratories of Columbia University, New York, by Prof. Ira H. Woolson, E. M., gave the following excellent result:

MODULUS OF RUPTURE IN LBS.

Transverse breaking tests—	
Lowest	542
Average	678
Requirements of N. Y. Bldg. Dept.	400
Better than N. Y. Req.	69%
ULTIMATE STRENGTH IN LBS. PER SQ. INCH.	
Compression tests (dry)—	
Lowest	5,368
Average	5,416
Requirements of N. Y. Bldg. Dept.	2,500
Better than N. Y. Req.	116%
REDUCTION IN STRENGTH FROM "DRY" TESTS.	
Wet after absorption—	
Lowest	20.7%
Average	15.8%
Greatest reduction allowed N. Y. Bldg. Dept.	33 %
Better than N. Y. Req.	10.9%
PERCENTAGE OF ABSORPTION AFTER SOAKING 48 HOURS.	
Absorption tests—	
Highest	16.7%
Average	15.2%
Highest allowed N. Y. Bldg. Dept.	20 %
Better than N. Y. Req.	16.5%

Progressive Western Plant.

HELENA, MONT., Oct. 15.—The Montana Granite Brick Co., whose plant is situated at the junction of the Northern Pacific and Great Northern railroad tracks, in the vicinity of Capitol Hill, has just issued a handsome illustrated catalogue descriptive of its plant and the product manufactured by the company.

Although this enterprise is comparatively new in Helena, there are many evidences of its product in the newly erected residences both in this city and many other cities in the state. The demand for granite brick manufactured by this concern has not confined itself within the borders of Montana, and shipments in large quantities are being made to other states.

The catalogue is a handsome testimonial of the company's progressiveness, and aside from the information contained therein relative to the manufacture of granite brick, there are many interior and exterior views of the plant and permanent residences erected with the brick manufactured here.

The book is printed in two colors on heavy calendered paper, with a striking cover design depicting the snow-clad peaks of the Rocky Mountains.

Wisconsin's New Sand Lime Brick Plant.

The International Sand Lime Brick & Machinery Co., 90 West street, New York city, has recently completed a model sand-lime brick factory at Portage, Wis., for the Columbia Silica Co., of that place. It is located on the glass-sand deposit owned and operated by the Columbia company, where they have installed a drying and screening plant.

The buildings are all of stel construction. The erection of this factory has been in charge of J. C. Shaffer, engineer, of the International Sand-Lime Brick & Machinery Co. Steam is supplied to the brick factory from the boilers of the sand plant, where also the sand is dried sufficiently for the process. A 150-horsepower "Skinner" engine, tube-mill, lime-crusher, tanks, press cylinder and cars complete the new equipment.

Solid concrete floors have been put in throughout the factory and everything has been done to make this a model plant.

The Outlook Is First Class.

The Belt Line Brick Co., 512 Andrus Bldg., Minneapolis, Minn., write:

"Business with us this (our second) year has been very good as regards volume. We have made this year, so far, about nine million brick and have shipped about eleven million. We are running out about 45,000 daily and shipping to capacity and expect to continue so for the remainder of the year. Building is good in this vicinity but prices still remain at the extremely low scale of last year, being considerably less than those of 1907. We are getting a better price for our brick than the local clay brick is selling for and are doing our best to raise the prices to a reasonable standard. We believe the building outlook fo next year is first class and that higher prices will obtain."

Look For Still Better Prospects.

The Schultz Brothers Co., Ltd., Brantford, Can., write:

"We have made about two and a half million brick this year thus far, and want to make another million if the weather permits. Our sales have equaled our output; starting slow and continuing so until the middle of June, when business grew better and is keeping up well, with still better prospects for the coming year."

Reorganization of Plant.

The Sand-Lime Brick Co., Philadelphia, Pa., has been moving its plant, enlarging it and is in a process of reorganization. This has shut down the plant and stopped activities until it is accomplished, which will no doubt be very shortly. They say: "We have always used the Schwartz System but in our new plant propose to change it somewhat by using a silo."

Plant Destroyed By Fire.

PATERSON, N. J., Oct. 15.—The plant of the Foxhall Brick Co. on the River Drive at the extreme south end of Paterson was totally destroyed by fire October 4; loss $40,000. Thomas Foxhall and his father were the principal owners. They manufactured a sand lime brick of a special grade.

The King Lumber Company, Charlottesville, Va., want prices on granite brick (common and gray pressed).

CLAY

Location For Next National Convention.

Secretary Randall, of the National Brick Manufacturers' Association, is taking a straw vote among the members of the association to ascertain their preference as to the place for holding the next National convention. In a recent circular, the members are requested to express their choice between New York City, Richmond, Va., New Orleans, La., Memphis, Tenn., Louisville, Ky., and Kansas City, Mo.

Purchase Clay Working Machinery Business.

DAYTON, OHIO, Oct. 19.—The C. W. Raymond Co., East Fifth street, has purchased the clay working machinery business of the Horton Manufacturing Co., of Painesville, O., capitalized at $100,000. The Horton company manufactures a large line of soft mud brick making machinery which has not heretofore been made to any great extent by the Raymond company. The latter will commence building new and modern structures in order to take care of the increased business which the purchase gives them.

Returning Prosperity.

FROSTBURG, MD., Oct. 15.—The Savage Mountain Fire Brick Works at Frostburg are experiencing returning prosperity. During the dull times the trade at this plant did not amount to a carload of brick a day. Now from twelve to fifteen cars a week are being shipped. The kilns at the plant are being enlarged.

Fires Start at Harrison Plant.

ENSLEY, ALA., Oct. 14.—At twelve o'clock noon on October 7 the first fire was started in the boilers of the Harbison-Walker Refractory Company's new brick plant near Wylam. The torch was applied by little Miss Madeline Miller, the four-year-old daughter of Assistant Superintendent Miller of Avenue F, Ensley.

New Brick Plant at Streator.

The Streator Clay Manufacturing Co., Streator, Ill., contemplate the erection of another plant for manufacturing brick early in the spring.

General Notes.

Fire destroyed the plant of the Horseheads Brick Co., at Horseheads, N. Y., October 10. Loss, $50,000, covered by insurance to the extent of $25,000.

The Sheffield Shale Tile Co., Sheffield, Ill., has been incorporated by A. W. Boyden, G. W. Boyden and C. W. Boyden, of Sheffield. Capital stock, $45,000.

The installation of new machinery by the Ferris Paving Brick Co., Mechanicsville, N. Y., increases the capacity of the plant to 84,000 daily.

The Union Brick Co., Cherryvale, Kan., will build a paving-brick plant at Independence, Kan., to be operated under the name of the Kansas Paving Brick Co.

The New Jersey Clay Brick Co., Camden, N. J., has been incorporated by Frank Murphy, Daniel McCarthy and William Giberson. Capital stock, $100,000.

The Dover Brick & Tile Co., Cleveland, O., has been incorporated by E. H. Arnold, G. B. Sloat, G. W. Arnold, J. H. Price and F. H. Burnap. Capital stock $40,000.

The American Clay Products Manufacturing Co., St. Paul, Minn., has been incorporated with a capital stock of $100,000, by L. F. Mettelman, C. R. Parker, F. H. Schriber, St. Paul.

The Hanrahan Brick & Ice Co., of Kingston, N. Y., has been incorporated with a capital stock of $30,000. The directors are: Wm. F. Hanrahan, of Saugerties; Wm. F. Rafferty, Kingston; James F. Dwyer and Robert J. Dwyer.

The Union Mining Co., Baltimore, Md., recently secured an order from one of the largest metal-manufacturing concerns in the east for fire-brick linings for five stoves, 80x20, making the second order of this kind recently booked.

The Eureka Fire Brick Works, Mt. Braddock, Pa., of which H. Watson is general manager, have been enjoying an unusually prosperous business with more orders than they can fill, the plant running night and day, including Sundays. This prosperity not only signifies improved market conditions, but is an evidence of the policy of fair dealing combined with honest products. This company makes a specialty of coke-oven shapes.

SCRIBO AFLOAT.

Makes a Trip on the Raging Mississippi For the Purpose of Inspecting the Great Waterway.

"Like a proud river peering o'er his bounds."—King John I, iii.

For many years it had been a cherished wish on my part to make a voyage on the raging Mississippi. Having heard during boyhood elaborate descriptions of river navigation given by my father, who, in one instance, took a trip from Pittsburg, Pa., to New Orleans, averring at the time that that was as far as the boats ran! In later years I had also read very interesting descriptions of boating on the river by Mark Twain and by other ex-pilots. A few years ago I contemplated making the trip from St. Louis to Memphis, but one or two parties, to whom I mentioned it, rather discouraged me from doing so, and had some observations to make with regard to the dangers, etc., but I found it was entirely imaginary on their part, seeing that they themselves had not made the trip.

As all things come to those who wait, my chance at last arrived, and I concluded that I would return to St. Louis via the river. The boat was advertised to sail Friday noon, and realizing that at this season of the year there would probably be a good many people like-minded, I took the precaution to secure my passage the day beforehand, and made my arrangements to have my baggage hauled to the boat the next day. The fare, I was informed, was $7.50 for the trip, including the meals, but further inquiry developed the fact that I would have a room-mate. Asking what the exclusive use of the room would cost me I was informed that it would be double fare. Thinking that it might be my luck to have a congenial party I took my chances in that respect. The following day I was on board the boat about an hour before she was advertised to leave, and watched the loading of the various articles of freight, which was being done by roustabouts, as they are called, who were being superintended by the two mates, one of whom was on the wharf-boat and the other on the steamer near the gangplank. As a colored gentleman came along with a package on his shoulder the mate glanced at the marks, gave directions about the stowage of the package, and as the man passed him tapped it with a stick about a yard long which he held in his hand. I had wondered exactly what the office of that stick was, but in watching I noticed it was merely for the purpose of pointing, or otherwise superintending matters. Feeling some interest as to the character of the boat I consulted the inspection certificate and found that the Stacker Lee was built in 1902; 710 gross tons; has sixty-four state rooms and is allowed to carry 156 passangers. One master, two pilots, one mate, one chief engineer, one assistant engineer, four firemen, ten deck hands, three watchmen and fifteen in the steward's department. This boat is 225 feet long and is a stern-wheeler. The weather was propitious, but pretty hot.

Thinking that there might be some trouble from mosquitoes I had taken the precaution to buy some netting and patronized one of the big department stores. Inquiring the price of what the clerk called netting I found it was 65 cents per yard, and bought, I think, about five feet. In speaking of this afterward to a lady in St. Louis she laughed pretty heartily, and said that regular mosquito netting was about 5 cents per yard, and that such shopping was just like a man!

Hearing the music start up and the bell begin to ring I concluded that we were about to take our departure; there was a good deal of hurrying to and fro, together with a good many commands being distributed around, chiefly by the captain, who had taken his position on the upper deck. There were a few white people on the wharf boat, taking leave of their friends, but the principal part of the contingent were colored ladies dressed in their best bib and tucker, who were bidding "goodbyes" to sundry deckhands, firemen and roustabouts on board, waving their handkerchiefs just like white folks. A man came along and hauled down the boat's pennant at the masthead. I asked him why he did that—it looked pretty well up in position, but he replied that it was customary when leaving port to haul in the flag. It would soon get worn out if it were allowed to be waving the whole trip. The word "port" struck me rather queerly, inasmuch as I was accustomed to New York, Boston and other ports on the Atlantic, and a port on a river seemed a misnomer. I omitted to state that just before sailing the roustabouts all made a rush for the mate, who had a punch with him, which he used to punch a slip which each man handed him. I suppose it had reference to getting their pay. An amusing feature regarding all these roustabouts, both those left behind and those taken aboard, was the great variety of soft hats which they wore. It would seem as if no two were alike and might have made the fortune of some of them in a vaudeville show. Among the articles of freight were a very large assortment of liquors, also sundry counters, safes and other fixtures of wholesale and retail liquor dealers. The song of "Oh! how dry I am," was just being chanted in Memphis, owing to the prohibitory law having become operative, and there was an exodus going on from the town of some of the larger liquor dealers. Part of them migrated to Cairo, some to St. Louis and others to Helena, Ark. Among other things some of their wagons were brought aboard, while at the bow of the boat was a very large-sized hearse with a tarpaulin over it. The juxtaposition of the hearse and whisky barrels would have furnished an object lesson for a temperance orator. As things were in a rather crowded condition on deck, the mate ordered the fall and tackle adjusted to a couple of the light wagons, which in a jiffy were landed on the upper deck over our heads. I had noticed that the wharf-boat was a new one, seemingly pretty nearly entirely of iron, and reached by sundry passageways to the levee, which is quite steeply inclined, and paved with stone. I inspected from the wharfboat the draft of the steamer and found she was, as loaded, drawing four feet.

In going up the river I observed that after a while we were passing along the right bank, being on what sailors term the starboard side of the river. We were about fifteen feet from the bank. Not long afterwards we crossed over and were skirting the left bank of the river; probably the pilot was being governed in his course by the channel and also to avoid the force of the current in certain reaches of the river. Being at a high stage of water the trip was more enjoyable for that reason. We were high up on the river instead of being down in a valley, where the breeze would not reach us. Much of the time we kept pretty nearly in the center of the river. Occasionally a house and barn could be observed, but for miles there was nothing to be seen but the dense growth of some kind of trees. After a while we reached some white-painted posts, with boards crossed like an "X," which indicates a crossing, and the pilot is supposed to place the stern of the boat on it and the bow at an opposite point.

APPROACHING MEMPHIS, TENN.

I had calculated on being an occupant temporarily of the pilot house, for the purpose of interrogating the pilot occasionally for information, but the captain informed me this was impossible, as it was against the law. At a sparse settlement of a store-house and one or two shanties, bearing the euphonious name of Golden Rock, Ark., we steamed in in response to salutations from the bank, and I noted a party who was supported by a man on either side of him, around each of whose necks this man had placed an arm. The captain was on hand and immediately called out that he could not take that man aboard; the gangplank meantime had been run ashore and a colored woman with a child in her arms had mounted it and proceeded part way on board. I could not hear what was said from the shore, but the next remark the captain made was to the effect that the man and his family would not be received except as deck passengers. This, however, did not appear to satisfy them, and the boat pulled out. It made a rather sorrowful picture to note the disappointment which the man and his wife manifested. On inquiry I learned that he would need medical care, and that the dispensary on the boat was only available for white people who were passengers, while this man was a mulatto, consequently if the captain had taken him as a passenger, and he not being eligible to the use of the dispensary, because of his color, the boat company would be liable to be fined to the tune of $2,500. Beyond this settlement vestiges of an old levee could be seen, and a new one had been built much farther back. In talking with one of the passengers he remarked he had lived near this point and went away from it about two years ago. On his return he found several acres had been swallowed by the river during his absence. He stated that the overflow by the river of the bottom land resulted in making it extremely productive. The silt that is deposited has remarkable fertilizing properties, but it was also very productive of malaria and mosquitoes, consequently it had been a question whether or not in his case the additional productiveness was an offset to the drawbacks of living there. He concluded that it was better for him to leave that locality for good.

After a while we arrived at Osceola, Ark., and I was astonished to see, after the landing stage had been shoved ashore, that we were being invaded by a bevy of girls dressed in all the colors of the rainbow, accompanied by the ever-present smiling drummer with his customary grip in his hand. Directly the girls got aboard the enlivening sound of the orchestra immediately suggested a dance to them, and they went about it with a great deal of activity. The searchlight was now turned on, it being dusk, and things looked very lively. After a run of about five miles the boat went ashore again, and all the aforesaid young ladies and drummer left us. Evidently the whole business was a short river moonlight outing trip for the benefit of their health. Now the bright lights of various lighthouses on both sides of the river began to sparkle, and breezes wafted from the land, and waves danced the river, making the trip cheerful, refreshing and enjoyable.

The passengers had by this time become pretty well acquainted with one another and mixed up in very friendly fashion. Pretty soon the moon was high in the heaven and landings were made with ease and safety. Notice of our approach was given by blowing the whistle three times, and the parties in charge of delivering or receiving freight were on hand when we put the landing stage out. The little settlements where we stopped were miles apart. One is impressed, as hour after hour passes and nothing is to be seen, either on the river or on either shore, that the country is not very thickly settled, and it will doubtless be impossible for it to become settled as long as the land is overflowed, as it is every year, leaving only the higher portions available for habitation and cultivation.

The town of Randolph, Tenn., is now a long way inland. Years ago the packet boats plying between St. Louis and New Orleans stopped at Randolph and did not stop at Memphis. The Randolph people imagined that some day they would become a metropolis, but at the present time it is merely a country postoffice, with a few stores, houses and numerous graveyards. A man familiar with that country, with whom I was talking, stated that the land was so poor you could scarcely raise an umbrella on it!

At the time of retiring I discovered that I had for a room-mate a young fellow who had been living in Georgia; it seems that he had been interested in a country notion store, and had sold out to his partner. He said he was contemplating taking up his home in Oklahoma and trying his fortune there. After I had retired I noticed that at intervals they seemed to be relieving the pressure on the boilers by blowing off steam, which I thought was a very wise precaution and felt relieved, as I had discovered that our stateroom was immediately over the boiler, and, to tell the truth, it was pretty warm in that room. However, the door towards the outside could be opened and the lattice door used in place of it to furnish a draft. I concluded that as there were two of us in the room if anybody came in who had no business there one of us would probably awaken and take care of him, consequently I also left the door opening into the saloon open about a couple of feet, which supplied more draft and made it quite comfortable. I still had some fear of mosquitoes, but none seemed to be prowling around. About 3 o'clock a. m. I got up and took a turn all around the boat. When I got back my companion inquired, "What about it?" and I reported, "All was well;" that I had some concern about fire and I wanted to know if everything was all right. We arose betimes in the morning. I had already learned that when the orchestra struck up it was the sign that breakfast was ready, and all hands would immediately put in a very prompt appearance for the meals, which, by the way, were very satisfactory. This was Saturday morning and no papers were to be had. By interviewing the porter I left an order for one, which would probably be a St. Louis paper, which he expected to be able to get at Cairo on Sunday morning, although we were due to arrive there around 2 a. m., thus we were cut off from the world for a day.

The next object of interest which I noticed was a pole about seventy-five feet high on the left bank, and inquiring the reason for it I found it marked a placed where a telephone wire crosses the river. About this time passengers seemed to feel the need of some kind of excitement, and it occurred to one of the gentlemen that throwing coins to the roustabouts would furnish much amusement—and, indeed, it did. Talk about football and halfbacks; these chaps certainly discounted that business, and there was a mix-up on the deck when the coin struck it that was laughable in the extreme; arms, legs and heads were apparently

inextricably twisted in the struggle. Their hats were punched off and their "cravats" badly disarranged. After scrambling a while one would get the coin, and then all would rise and look up for another distribution of silver, which was kept up until the pockets of the different passengers were entirely empty.

I talked with Captain Lightries regarding the deep waterway, asking him what he thought about it. He asserted it was blank foolishness; that there was not enough business. The river served, he remarked, a good purpose as a sewer, while the engineers, in some cases, lacked conscientious scruples. He allowed it might do some good regarding rates by holding the railroads in check.

Along this section of the river [Reelfoot Landing, Tenn.] I noticed that the storehouses for the reception of freight were erected on posts, which indicated that at times it must be very damp in that locality.

Saturday morning found us at Caruthersville, Mo., a manufacturing town of about 4,000 inhabitants. After leaving this town a man was seen in a grove waving his arms like a windmill, and presently the boat ran in and took him aboard. He was a negro, and for the sum of 75 cents was taken to a point about ten miles up the river. Pretty soon we made the edge of the New Madrid district, famous for the tremendous earthquake which took place there about one hundred years ago. At this point we took aboard a washtubful of catfish of great size, which we ate up subsequently. At all the principal landings a delegation of the leading citizens and citizenesses, large and small, white and colored, put in an appearance, it being an event of but once in three days, if in fact the boat stopped at some points with any degree of regularity.

At New Madrid we took on and discharged quite a little freight in the presence of the usual delegation of the people. Beer and furniture seemd to be the principal articles of freight delivered here. At some points we took aboard many sacks of potatoes, but they went off again before we had gotten very far up the river. About 4 o'clock Saturday afternoon we overtook a boat belonging to the Mengel Box Company, of Louisville, and about the same time we had a smart shower. This was the first boat we had seen, and it was pushing a tow of logs on barges. I was informed that on the Tennessee side, across lots from where we were, after traversing a distance of four miles it would bring one to the river again, but by water we would go around a bend of eighteen miles to reach this locality.

Reaching Sunset Landing I noted about eight or ten houses, all very much in need of paint. Near this point, which was on the Tennessee bank, we made a landing, and preparations were made to bring a good-sized hog on board. A couple of chains were passed under his body and made fast to a couple of poles, which were placed on the shoulders of four negroes, and the said hog was brought aboard in short order, while a negro followed carrying a pig on his back. These passengers protested loudly and vigorously at being so summarily disposed of. In passing the banks I noticed that the land was of the blackest loam, which indicated great fertility. The reaches of the river were very imposing in their magnitude. In many places it seemed as though we were on a lake, and one pretty nearly needed a spyglass in order to determine what he saw on either bank. Our next load was two horses, one cow and two hogs; and at another landing a horse that was to be brought aboard was a spirited animal, and as he objected very vigorously to the searchlight which was turned upon him it consequently was discontinued. They endeavored to haul the horse upon the gangplank, but he stood on his hind legs in his attempts to get loose. A row of roustabouts had been placed on either side of the gangplank, and it looked to me as if it were likely that the horse would shove some of the said roustabouts overboard. This idea also evidently occurred to the mate, and orders were given the roustabouts to bring fences from on board and a row of them was placed along each side of the gangplank in sections. Then another run was made with the horse and he came along all right.

At Hickman, Ky., which place is situated on a high bluff, I learned that the water was 186 feet deep; that around the bend the rapids were very dangerous on account of strong undercurrents, and on close observation it could be seen that the water quite near the bank was not less than a foot higher than it was where we were. The bottom of the river is said to be a rocky ledge.

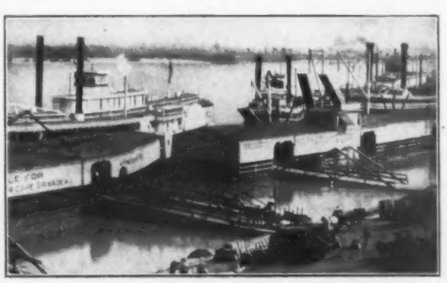
Sunday morning opened as a bright and glorious day, and noticing a good deal of excitement aboard, I found that a fire alarm had been promulgated for the purpose of having a trial, which is, by the way, required by law, and every man was at his station in response to orders from the captain. The rowboats' ropes were unloosened, hose were fixed, water turned on and all the preparations for extinguishing a fire were quickly made. After a while I asked the captain if the fire was over, seeing the preparation for abandoning their posts were being taken by the men, and he informed me that it had been put out! We had left Cairo at about daybreak, and were served with newspapers, which enabled us to find out what had been going on since Friday in the world at large. I noticed that the bar of the boat was doing business as usual, and after a while we made a landing on the Missouri side. One of the passengers, feeling in need of a "bracer," stepped inside the bar, where he was informed that there would be legal complications if the dispensary was operated at that time, but on reaching the middle of the stream again the said complications were quickly removed, and the passenger was accommodated. We found at a Missouri landing a lot of wheat in sacks in a shed. These were to be taken on board, and it was amusing to see the roustabouts proceeding in single file. Each one grabbed a sack weighing about 120 pounds, landed it on his shoulder and trotted along, simply balancing the bag without putting his hands to it. Many of these brawny fellows had both their hands on their hips. I suggested to some of the passengers that they go ashore and take a little exercise by helping to get some of that wheat aboard, but they did not bother themselves about it. As the men came running down the landing stage one after another, the wheat was passed aboard in lively fashion, and what we saw was an actual reproduction of what has been going on for fifty or seventy-five years.

U. S. ARSENAL AND MISSISSIPPI RIVER AT ST. LOUIS, MO.

A little further along, I noted as we pulled up to the bank, a pig sty, in which were three large hogs, and as soon as the roustabouts had landed half a dozen of them jumped into that sty and made for one of the creatures. The squealing which emanated from the throats of those three hogs as they dodged about could certainly have been heard nearly a half mile. While one of them was seized by said negroes and immediately hoisted on the back of one of these colored gentlemen, one negro grabbed an ear and another the other ear and a third got hold of the tail, and with its legs elevated in the air and struggling vigorously the hog was promptly hurried on board, while other negroes managed the second, and finally the third. The commotion that was raised by the performance brought all on board to the side of the boat, which caused it to list, and the excitement and delight with which the passengers viewed the proceedings were suggestive of a vaudeville performance.

Talking with one of the passengers, he said that a few years previous, while he was in Memphis, he observed a tow of coal barges passing down the river which had an area equal to eight acres, and this fact gave some idea of the tremendous possibilities in the freighting of heavy material on the river. About the middle of the forenoon we overtook a boat pushing ahead of her a number of barges loaded with railroad ties. This, as well as the steamer previously mentioned, was a stern wheeler. The old-time packet boats were about 100 feet longer, and the finest were sidewheelers, some of which were equipped with powerful engines, which cost, probably, as much as the boat we were on. A little later on I observed in the distance the Thebes railroad bridge, and at this point a series of bluffs on the Missouri side were a great addition to the scenic effect, while on the Illinois side was fine intervale land.

During my stay on the boat I made sundry trips over it, at one time thoroughly investigating the lower deck. Becoming acquainted with Engineer Manning, he kindly introduced me to the working of the boat, and explained the various kinds of machinery.



MISSISSIPPI RIVER, ST. LOUIS, MO.

Sunday evening we reached Grand Tower, on the Missouri side, where there is a very powerful eddy, which practically produces a whirlpool and, consequently, is a very dangerous place for anyone to be fooling around in the river in a skiff. At the opposite, or Illinois, side we stopped to secure more coal, which was shoveled aboard from a barge alongside. At this point the river is not nearly so wide as at others, and a pleasing experience at this time was witnessing a most beautiful sunset. Reaching Cape Girardeau, which is quite a large town, we both received and discharged considerable freight. I noticed moored alongside the bank a floating theater. I concluded that it would be time well spent to inspect it, and so climbed on board. It was, I found by talking with W. R. Markle, the manager, one of the largest boats of this description on the river, it being 160 feet long and 47 feet wide. The interior was precisely like any other theater, the seats being arranged on an incline towards the stage, and there was a spacious gallery around the sides. They give musical concerts and plays, and do a very prosperous business. The boat is furnished with steam calliope, which notifies the surrounding country of its presence, and good-sized audiences are secured. When the theater-going population become satiated they simply move to another point on the river. I came very nearly being left behind in attempting to satisfy my curiosity, but was snatched from the said theater by a couple of roustabouts and landed safely on board the Stacker Lee. During the trip I had several chats with the captain, and at this time I asked him how fast we were going, and he replied we were making about 8½ miles an hour. I told him not to hurry on my account. While I knew we were due Monday some time in the forenoon, that day being a holiday I did not care if we did not arrive until evening. However, Monday morning we reached, near Commeree, the palisades on the Missouri side, which reminded me of the palisades on the Hudson, although the Hudson River bluffs are much higher. Montesano Springs, on the Missouri side, is a popular resort, situated near the mouths of the Meramec River. In this neighborhood is Chesley Island, where hogs are fed on the garbage from the city of St. Louis, and I noticed that a lot of Uncle Sam's burning oil was being wasted, because the lights in the lighthouses were burning in bright daylight. After a little, the pall that hangs over St. Louis from the various extensive manufacturing establishments there became visible, which indicated that we were nearing the metropolis of the valley.

It was about 10 o'clock in the forenoon when we reached the wharfboat and, having considerable grain on board, it was necessary for the boat, after landing the passengers, to proceed down the river to elevators. I certainly feel warranted in advising my friends to save up their money and make the trip.

Concerning the Physical Condition of the Mississippi River.

The word Mississippi means great river—literally, "Father of Waters." It is the principal river of the North American continent and, including the Missouri River, the longest in the world. Its source is nearly 1,500 feet above its mouth at the Gulf of Mexico. Its length is 2,500 miles and, counting the Missouri, has a total length of 4,200 miles. It has 240 tributaries and drains a basin of 1,257,000 square miles. The Ohio River, one of its most important tributaries, from Pittsburg to its mouth, is 963 miles long.

Taken altogether, it represents a length of 14,000 miles, but in straight lines only 9,000 miles, thus showing 5,000 miles to be due to the windings of these rivers.

Below Cape Girardeau, on the west side, the whole country down to the gulf is bottom land for an average width of fifty miles. From Cairo to the gulf the river flows in a channel on the summit of a low ridge, the land sloping gradually away from the banks on either side, so that the greater part of the bottom lands lie below the level of the river surface.

Floods cause a variation of over 50 feet between high and low water marks. The current is from three to six feet in a second, according to existing conditions.

The distance from Cairo to the gulf in a straight line is 600 miles, but the windings and twistings of the river make it 500 miles more. The sediment brought down annually is estimated to be over 400,000,000 tons.

Straightening the river, allowing it were possible, would convert it into an uncontrollable torrent. It deposits about 15 feet of silt in places during a year, and sometimes removes such deposits in a week, or even less time. It removes the earth from one bank and carries part of it to the other side at a lower reach. When the pressure against one of its bow-shaped curves becomes too great, it gives way and the old bed of the river becomes a lake. In some instances, towns built on the banks for the purpose of securing river navigation are now practically abandoned because of being deprived of access to it. Others are now threatened with a similar fate.

CONCRETE ENGINEERING

The following convention dates have been announced for 1910:

Nebraska Cement Users' Association at Lincoln, February 1-4.

Interstate Mantel and Tile Dealers' Association of the United States at Chicago, February 15-19.

Illinois Lumber Dealers' Association at Chicago, February 16-18.

Illinois Masons' Supply Association at Chicago, February 16-18.

National Association of Cement Users at Chicago, February 21-25.

American Society of Engineering Contractors at Chicago, February 24-26.

National Builders' Supply Association, February 23-24.

Illinois Society of Municipal Contractors at Chicago, February 24-26.

Northwestern Cement Products Association at St. Paul, Minn., March 1-5.

Iowa Cement Users' Association at Cedar Rapids, March 9-11.

Engineers Discuss Concrete Piles.

PHILADELPHIA, October 19—Members of the Junior Section of the Engineers Club of Philadelphia held their first meeting of the season October 11th. R. P. Raynsford, of the Raymond Concrete Pile Co., read a paper (illustrated with lantern slides), entitled, "Making and Placing of Concrete Piling," giving a description of the various methods used and the advantage over the wooden piling as to permanency.

Chicago Moves For Better Streets.

Now that the Board of Local Improvements of the city of Chicago is after street-paving contractors with the purpose of making them live up to the specifications under which the work is supposed to be done, attention is called in a forceful manner to a wasteful neglect in this important item of public improvements. All street paving contracts call for a foundation of six inches of concrete. This is little enough when honestly put in, but the charge is made on the authority of the Board that few contractors use more than 4½ inches. City inspectors who are supposed to keep close watch of the work as it progresses are not always "on the job," and the result is a lot of dishonest construction for which the contractors get full price. Frank T. Fowler, member of the Board, says he has uncovered a job of this kind on North Kedzie avenue, which is alleged to be only one of a large number of similar instances.

In this dishonest construction may be found one of the most fruitful causes of the complaints made by property owners and others about poor pavements. A certain street, for instance, is paved with asphalt laid on a concrete foundation at an average cost to the property owners of $102.90 per twenty-five feet of frontage. This work is "under reserve for five years;" this means the contractors must keep it in repair for that time. Shortly after it is laid the surface is full of holes and the people who have paid for the work, unacquainted with the real cause, assert that they have been robbed by the use of poor materials, while the fact is the foundation is not strong enough to sustain the weight it has to carry. The materials, as a rule, are good. Under pressure from the authorities the contractors keep these streets in a partly satisfactory condition, for the required term of five years, but the repairs are made in a perfunctory manner, and when the reserve limit has expired there is urgent necessity, in many cases, for resurfacing or entire repaving.

All of this trouble and expense might be avoided if proper foundations were insisted upon. On residence streets where the traffic as a rule is light, an honest six inches of foundation is enough. There are other thoroughfares which require from 10 to 18 inches, according to the nature of the traffic. "But this will cost more money," say the people who foot the bills. Of course it will, but it will be money well expended as pavements laid on foundations of this kind will last much longer than those we now have, and the item of repairs will be very materially lessened. These suggestions, of course, carry with them the idea that there will be a rigidly honest inspection of all work as it progresses, and that contractors will be obliged to adhere strictly to the specifications under which the work is done. This would be a move in the direction of real economy, and would tend to do away with the abominable street conditions with which Chicago is now disgraced.

So well is the demand for more substantial foundations understood by men who have made a study of the subject that experts like Messrs. Arnold and Weston, of the Supervising Board of Engineers, have recommended that twelve inches of concrete, "made of first-class materials," be used hereafter on all highways where there is street-car traffic, and it is understood that this important provision is to be included in all contract specifications.

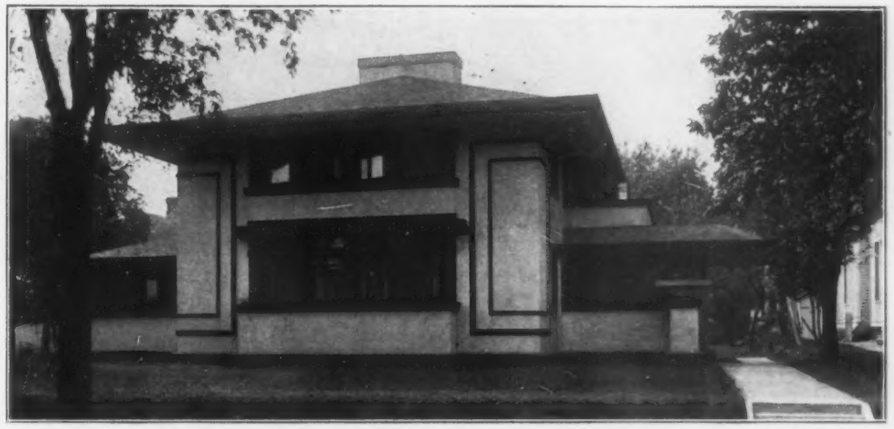
Chicago soil is a treacherous one at best to lay enduring pavements on, and the occasion for honest, substantial work is imperative. In many parts of the city there have been fills of from five to eleven feet with refuse materials. This is evidenced by the fact that in making excavations the remains of old wooden sidewalks have been found at these distances below the present surface. The result is a loose, friable substance poorly adapted to sustaining weight. When on this is laid an insufficient, weak pavement foundation there is one inevitable outcome as soon as heavy traffic begins to pass over the surface—the base gives way, and ungainly and dangerous holes appear.

Competent architects give serious thought to the figuring out of proper foundations for the buildings they plan so the required weight-carrying power may be assured. Why not use the same common-sense tactics in constructing our street pavements?

A Pretty Residence.

A striking example of unique style of architecture combining the attractive with the comfortable is exemplified in the residence of Dr. G. C. Stockman, of Mason City, Iowa. Another feature of this pretty residence is the cement plaster exterior which gives such a pleasing effect. This was obtained by using Northwestern Portland cement.

The building proper is 28' 10" square and has a sun parlor on the east side, and the entrance is on the west. From eaves to eaves the building is 67' 4" wide. The entrance is on the ground and the steps lead into the living room. There are four windows in front, which give ample light into this room, and a large fireplace is on the opposite side of the windows. The dining room is back of the living room, and is connected by a hall. The kitchen and butler's pantry complete the number of rooms on this floor.



EXTERIOR CEMENT PLASTERED RESIDENCE OF DR. STOCKMAN, MASON CITY, IA.

The second floor has four bedrooms, finished in birch. The woodwork is left in the natural state and oiled with linseed oil. The floors are also oiled, which gives a very unique effect. Acme Cement plaster was used in plastering the house.

The building has a concrete foundation laid in bed rock. The basement contains a large cistern made of concrete reinforced with wire so that rain water for household purposes is stored in it.

The building was designed by Frank Lloyd Wright, who has designed so many unique homes in Oak Park, Ill. In preparing the plans for this, he was assisted by the suggestions of Mrs. and Miss Stockman and many of their ideas have been worked out in the building.

The contractor for the work was Christ Rye, of Mason City, and it was executed under the personal supervision of Mr. Wright.

CONCRETE BLOCK FACTORY AND YARD OF E. J. SCHWARTZ, WICHITA, KAN.

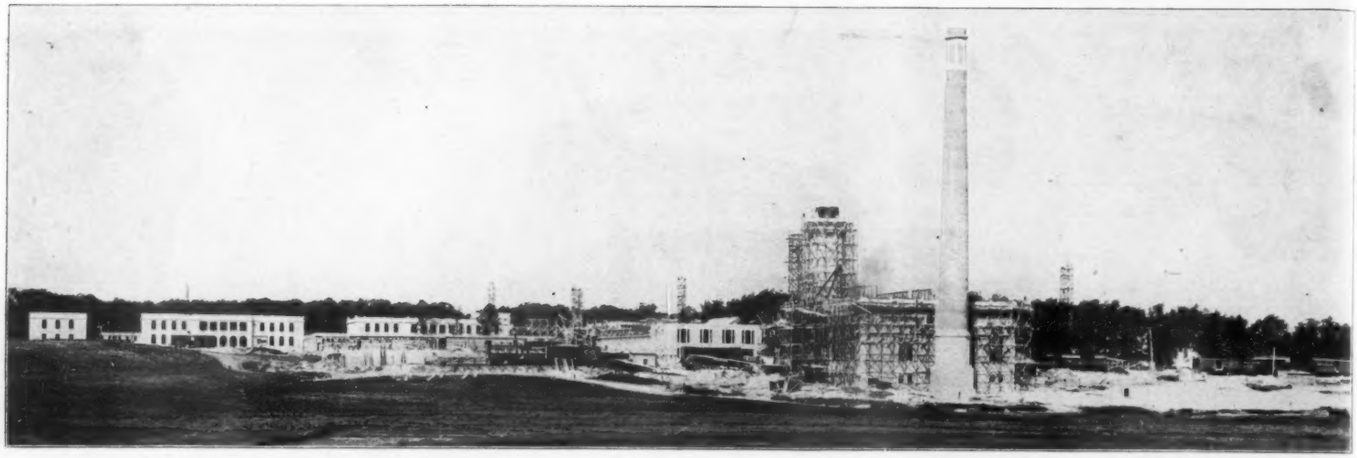
Concrete Plant of E. J. Schwartz.

The accompanying illustration shows the factory of E. J. Schwartz, at Wichita, Kan. This is the largest and best equipped plant in the southwest and manufactures everything in the concrete line. It uses Simpson and Miles molds, has two 18-inch Eclipse mixers, and one 24-inch X. L. mixer. The factory is 40x90 feet and employs eight men and three teams steadily.

Structural Tile Plant In Iowa.

H. L. Green, manager of the Concrete Stone Co., Waterloo, Iowa, was a Chicago visitor who took in the deciding games of the baseball season. As a manufacturer of concrete blocks and building specialties, such as window caps, sills, porch columns, etc., Mr. Green's concern has made good, having built up a valuable reputation for dependable quality and honest values. Recently this company installed four of the Pauly concrete tile machines to make the shapes and sizes needed in the market of Waterloo and vicinity. Mr. Green says that the new goods won instant recognition, both from architects and contractors, and the building public as well. He is turning out about 2,500 tile per day, with a prompt sale for every one of them that can be delivered. This concern has a very valuable sand deposit as the basis of their concrete manufacturing business, which enables them to sustain the uniform quality of their products. Mr. Green, by reason of his successful experience in the concrete manufacturing business, is justly entitled to be considered an expert, and he says without reserve that the new structural tile branch of his extensive works has already demonstrated itself to be a much larger profit producer than anything else in the concrete line. He considers it worth more to his company than all the balance of the equipment and the well-established good will besides.

"Why, in less than two months I can show an actual collected profit on the investment, with more business offered than I can take on," is Mr. Green's statement.



GENERAL VIEW OF COOK COUNTY (ILL.) POOR FARM BUILDINGS AT OAK FOREST, ILL.

THE NEW COOK COUNTY POOR FARM.

(Continued from page 3.)

was completed on schedule time demonstrates his ability to ably handle such a large undertaking. Most of the time he had 500 men on his pay roll.

On the exterior each building is veneered with buff brick, trimmed with light gray face brick. The inside of the porches are trimmed with facing brick. All interior surfaces are faced with hollow brick, to receive the plaster. The water tables, consisting of the base course, is of concrete blocks. These blocks are cast on the ground, in wooden molds, and are composed of a mixture of cement, sand and crushed rock. They are faced with a one-inch rich mixture and troweled to a smooth surface. The terra cotta trimmings for cornices, sills, etc., are made to match the color of the brick in the buildings.

All the buildings are connected by corridors and tunnels, through which the wiring and pipes are carried, so that in case repairs are to be made in this apparatus, the work may be easily done.

In the concrete work, 40,000 barrels of Universal cement was used, besides a large amount of Chicago AA cement. In mixing the concrete, five Smith mixers were used. These were located conveniently to the buildings, and the material, after being thoroughly mixed, was conveyed by carts to the place for pouring.

The work, as it now stands, is about 80 per cent completed, and the general contractor expects to have the buildings done by January, 1910.

The concrete walls of the buildings vary from 17″ to 13″ in thickness. All the floors were cast in reinforced concrete slabs varying from 4″ to 9″ in thickness. In the hospital building the floors were cast 11″ thick. The reinforcing bars are of ½″ steel, plain and twisted to suit the particular method of construction. All steel work in floors and beams is enclosed in octagonal shaped pillars of concrete.

The Service building, which is the main structure, is two stories high and 161′x223′ in size. It contains six rooms and basement. Particular attention was given to the stress loads allowed in this building and the architects specified that in the dining room a live load of not less than 60 pounds per square foot be allowed; in the bakery, cooking and refrigerator rooms, 80 pounds per square foot is the minimum; in the coal room 200 pounds; in the fan room 150 pounds, and for the remaining floors to 40 pounds per square foot. The dead weight does not, on any floor, exceed 100 pounds per square foot.

In pouring the concrete, all mixtures were made very wet so as to allow it to penetrate all portions of

SMITH CONCRETE MIXER AT WORK ON COOK COUNTY POOR FARM BUILDINGS.

the forms. It was then spaded and tamped to fill voids. The stairways in this building are of reinforced concrete and trowelled to a perfectly smooth finish.

This building is connected with the others by means of corridors 14′ 2″ wide, underneath which are connecting tunnels 12′ 2″ wide, which carry the pipes and wires throughout the buildings. The floors are finished in mosaic, a mixture of Portland cement and marble chips rubbed to a smooth finish. The Novak Mosaic Co. of Chicago are the contractors for all the mosaic work.

The walls are covered with metal lath on which is plastered the hard wall plaster manufactured by the U. S. Gypsum Co. All plaster work was done by Lennox & Halderman of Chicago. The exterior of this building, as well as the others, is of brick with terra cotta cornices and all water tables, lintels and sills are of concrete.

There are two buildings for irresponsibles, one for the male patients, and one for the female patients. Each of these is a 1-story structure, 145′ by 109′, and the same method of construction is used in these as in the Service building.

The Administration building will contain the offices of the superintendent and his assistants, and is three stories high, 50′ by 100′. All the floors in this are of reinforced concrete and the specifications call for a live load on each floor of 40 pounds per square foot; and on the roof of 25 pounds. The roof is of concrete and the surface finished with a smooth trowel coat.

The Receiving building is two stories, 50′ by 100′.

There are six ward buildings. Each of these is 145′ by 92′, two stories high. These contain the rooms of the patients, and the same general style and means of construction prevails.

The general hospital is one of the largest buildings of the institution. It is 286′ by 119′ and three stories high. As in the other structures, the foundation and floors are all of reinforced concrete and the exterior is of brick with terra cotta and concrete trimmings.

The bath house is a one-story building 30′ by 67′ and will contain the bath rooms for the institution.

The workshop is a two-story building, 71′ by 70′. The floor of the workshop is on the ground and is of concrete 3½″ thick with ½″ top dressing. As in the other buildings requiring columns, all steel girders which project beyond the ceiling are coated with two inches of concrete around which is wrapped wire lath to which the plaster is applied.

The Laundry building is a one-story affair, 60′ by 138′, and will contain the laundry department for the institution.

ACCURATELY MEASURING MATERIALS FOR THE MIXER.

WM. S. HOTCHKISS AND ENGINEER McKAY ALWAYS ON THE JOB.

METHODS EMPLOYED IN MIXING AND POURING CONCRETE ON COOK COUNTY POOR FARM BUILDINGS.

The nurses' home is a two-story building 34′ by 166′, and will contain the apartments for the nurses. This, like the other buildings, is of the same type of construction. The porch of this building has a ceiling of plaster of two coats with Adamant finish.

The building for aged couples is a two-story structure, 91′ by 48′, and will house the couples who live at the institution.

The mortuary chapel and morgue is a separate building apart from the general plan. It is one story high, 64′ by 32′.

The power house, plant and stack with water tower is 161′ by 102′. In the engine room, all the engines are on solid concrete foundations with footings 18′ deep. The 20 by 36 engine is on a foundation 27′ 8″ by 20′ 8″. Another engine for the plant is 18′ by 26′ and is on a foundation 20′ 5″ by 18′ 7″. The 16′ by 30′ engine is on a foundation 22′ 7″ by 17′. There is also in this plant an ammonia compressor which rests on a foundation 22′ by 15′. The coal for the plant is brought in by cars and dumped into concrete pits. From there it is conveyed by bucket conveyors to the boilers and dropped into the fire boxes. The ashes from the pits are removed by the same conveyor, so that this system is entirely automatic.

The stack for the power house was erected by the M. W. Kellogg Co., of New York. It is 12′ 8″ in diameter at the bottom and tapers to 9′ at the top. It is 213′ high and the foundation rests on a concrete footing 35′ 2″ by 35′ 2″.

The water tower is constructed on the same plan as the smoke stack. It is a steel tank, 109′ high and 15′ in diameter, with an exterior of brick. It has an elevation of 138′ 6″ and is underground 15′ 6″. The reservoir is 100′ by 18′, of reinforced concrete, and has a capacity of 100,000 gallons.

The Cook county commissioners are to be congratulated on the splendid layout they have secured. The planning as well as the execution of the work has been in the hands of competent men, and in the selection of materials they have used rare judgment. By using concrete they have protected the buildings from possible loss, as they have an absolutely fireproof construction. At the same time they have worked out artistic designs, which give a very pleasing effect to the eye, and no better form or method of construction could have been selected for this important work.

EWEN PATENT IS VOID.

United States Courts Rule that Contractors May Use Deep Sub-basement System.

Architects and building contractors all over the country will be vitally interested in a finding by the U. S. circuit court of appeals affirming the decision of the U. S. circuit court in the case of the General Sub-construction Co. vs. Mollie Netcher, John Griffiths & Son, and Holabird & Roche.

The General Sub-construction Co., of which John M. Ewen is the head, holds a patent dated January 13th, 1903, covering a process of deep sub-basement construction by which the danger of cave-ins, or damage to adjoining structures is avoided. Suit for infringement of this patent was brought by Mr. Ewen's company against the defendants in connection with the erection of the Boston Store addition at Madison and Dearborn streets in 1906. On the trial Holabird & Roche established the fact that they had used precisely the same system in the construction of the new Tribune building in 1901, two years before Mr. Ewen took out his patent. The U. S. circuit court, after one of the most lengthy and thoroughly tried patent cases on record, found for the defendants. Mr. Ewen's company appealed and the case went to the U. S. circuit court of appeals which has sustained the finding of the lower court, the opinion being the joint verdict of Judges Grosscup, Baker and Humphrey. By their ruling the Ewen patent is declared void, and all architects and builders are at liberty to use the system without the payment of royalties to the patentee.

"Some idea of the money value of this ruling," said a gentleman interested in the building business, "may be had from the fact that Mr. McEwen asked 10 per cent of the value of all buildings constructed under this system. In the case of a structure like the Monadnock block, for instance, this would amount to $180,000. As the system is being almost universally used in the erection of all large buildings requiring deep and strong sub-basements, and especially where there are abutting structures, the magnitude and importance of the case may be readily seen."

The vital principle of the system consists in leaving substantial cores of earth instead of excavating all the ground for the basements. The foundation walls of the adjoining structures are then held in place by jack screws, one end of which rests against these foundations and the other against the cores of earth. In this way a pressure is maintained which removes the danger of a cave-in. After the caissons and substructure walls are in place the cores of earth are removed.

Mr. Ewen's company has the right of appeal to the U. S. supreme court, but considering the thoroughness with which all the vital facts were brought out on the trial in the circuit court, and the affirmation of its verdict by such jurists as Grosscup, Baker and Humphrey, good lawyers assert that such action would be only a waste of money.

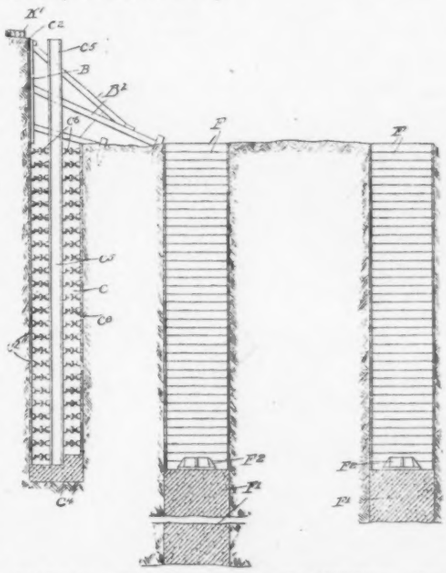


DIAGRAM SHOWING DEEP SUB-BASEMENT CONSTRUCTION.

K¹ is wall of abutting building. C² plank against wall. C⁵ permanent I beams. F and F concrete caissons. Spaces between the caissons show cores of earth, which serve to sustain the pressure brought to bear by the jack screws.

The Gloyd Building.

KANSAS CITY, MO., Oct. 14.—A splendid example of reinforced construction has been completed in the Gloyd building on Walnut street. The entire concrete work has been completed, though the exterior walls and the inside equipment have not yet been installed. The building is twelve stories high and has one basement and one sub-basement. The basement is 10′ deep and the sub-basement is 13′ below that. The first floor has a height of 18′ and the remaining floors are 13′ 4″ high with the top floor 4′ 5″. The building is 48′ wide by 110′ deep. The Ferro Concrete Construction Co. executed this part of the work. Seven thousand barrels of Kansas City brand Portland cement, furnished by Halliwell Cement Co., were used.

Switchboards of Concrete.

Five concrete switchboards, each 76 ft. long, and containing numerous pigeon-hole compartments for instruments that must be isolated, have been built by the Carnegie Steel Co. at its Ohio works. The main walls are 9 in. thick, and the barrier walls for the compartments from 2 to 7½ in., depending on their location and the weight of the apparatus on the horizontal slabs which they support. The boards were built in 16-ft. sections with felt expansion joints, and contain only 92 cu. yds. of concrete, though the superficial area is over 42,000 sq. ft. The material was a 1:2 Universal Portland cement mortar.

Glad to Get a Resting Spell.

"Never had such a busy season as the one now closing," is the way F. C. Wilcox, of the Foote Machinery Co., puts it. "Have been rushed day and night, and welcome the brief respite we will get between now and the first of the year when we must begin again on the new season."

This company handles a large line of machinery used by quarrymen, crushed stone, cement and lime producers, and contractors for concrete construction.

The Rock Wall Plaster Company, Rockford, Ill., is about to put on the market a concrete burial vault.

CEMENT SHOW PLANS

Exposition at the Chicago Coliseum in February Will Surpass Anything Previously Seen —Many Novelties Promised.

In several respects the third annual Cement Show, to be held at the Coliseum in Chicago from February 18 to 26, next, will be of much greater importance than the two preceding expositions, and they were most remarkably successful.

In the first place, the annual conventions of at least seven national associations, closely allied in interest with the cement industry, will be held in Chicago, virtually in connection with the show. The dates already set for these conventions are as follow:

National Association of Cement Users, February 21-25.

American Society of Engineering Contractors, February 24-26.

National Builders' Supply Association, February 23-24.

Illinois Society of Municipal Contractors, February 24-26.

Illinois Lumber Dealers' Association, February 16-18.

Illinois Masons' Supply Association, February 16-18.

Interstate Mantel & Tile Dealers' Association of the United States, February 15-19.

These conventions will bring to this city from all parts of the United States the brainiest men identified with the various industries mentioned, and their discussions are sure to have a beneficial and far-reaching effect.

Besides all this the Cement Show itself will be an instructive and entertaining whopper. The applications for space now in the hands of Secretary McDaniel make it sure that the coming event will eclipse anything of the kind ever attempted in this country. Not only is the space in the monster building well spoken for, but even at this early date, four months ahead of the time set for the exposition, extensive reservations of rooms have been made at the local hotels.

"I never saw anything like it," says one hotel manager, "not even in a national convention year, when the big political parties name their presidential candidates. There is evidently something doing in the cement line, judging by the eagerness of the men who are making applications for rooms."

All the details for the division of space in the great Coliseum building, and for the rules and regulations governing the exposition, have been decided upon by the men in charge, and a few radical changes, prompted by the experience of the past, have been made. Copies of these may be had at the office of the Cement Products Exhibition Co., 115 Adams street. The first drawing for space allotments will take place October 29, and will be confined to those whose applications are on file today, October 22. Such space as is not disposed of at this first drawing will be allotted later. At the last show there was not enough main floor space to accommodate all the exhibitors

Many things contribute to this end. In the first place, the year has been one of phenomenal advancement in the cement and kindred industries. There will be many new things to be shown, and many new people to show them. In addition to this the people of the country at large, even those who are not directly interested in the concrete business, are aroused to the importance of the event and will be here in force to advise themselves of the latest and best means of construction with the purpose of taking advantage of them when the occasion arises.

Then, we must consider the fact that for the first time there will be only one national show, instead of two, the National Association of Cement Users having combined with the Cement Products Exhibition Co. to this end. It is a happy outcome and means much in the way of strengthening and enlarging the exposition.

In connection with the show three cash prizes of $200, $100 and $50, respectively, will be awarded by the Cement Products Exhibition Co. for the best design for an ornamental centerpiece, to be placed in the center of the main floor. The cost of this piece must not exceed $2,000. The design may provide for the use of plain or reinforced concrete, concrete blocks, or cement plaster. If concrete blocks are to be used, the so-called rock face must be eliminated. The drawings required are a floor plan and a section must be delivered to the offices of the Cement Products Exhibition Co., 115 Adams street, Chicago, not later than 5 o'clock, December 1, 1909. To each design entered in this competition there must be attached a plain, blank envelope, sealed, containing the competitor's name and address.

CEMENT SAND BRICK.

Oklahoma Plant Finds a Ready Market for Its Output as the New State is Alive to Concrete Products.

One branch of the concrete industry that has pushed its way to the front is cement brick. This product has not had a spasmodic increase, but since its inception has steadily advanced to the place that it now occupies among substantial building materials. Along with this is its popularity, for the cement brick can be made into the most artistic and attractive designs. By the use of colors most delicate shades may be worked out, at the same time retaining its stability.

Without question the demand for cement brick will increase as people become better acquainted with it. It is a superior product and the brick properly made enters the market on the merits of concrete and stands the severe tests to which it is subjected. This has probably had more to do with the development of this particular product than anything else. The greatest demand for cement brick a few years ago came from a section where there was little or no other brick manufactured, and it was adapted for all building purposes. Now it is the competitor of any brick in the market. Where the available materials are to be had cement brick can be placed on the market in competition with any other brick manufactured.

The Bass & Harbor building, an 8-story structure, 40′ by 140′ on Broadway near Main street, Oklahoma City, is a fine example of reinforced concrete construction. In this the Gabriel system of reinforcing has been used, and the curtain walls are of cement brick, 160,000 face brick having been used by the contractor, H. Eilenberger.

The University Heights school building, which is now nearing completion, is built entirely of concrete products. The foundation is of monolithic construction and the water tables, sills and blocks at the entrance are all made of concrete, including 65,000 face brick. The building is three stories high and presents a very attractive appearance. E. M. Vanderslice is the contractor for the work.

Another striking example of this brick is shown in an apartment building on Harvey street, which is now ready for occupancy. The brick for this building, as well as those before mentioned, is furnished by the Oklahoma Cement Brick & Product Co., a concern which began operations in March of this year. The officers of the company are W. C. Burke, president; E. L. Benedict, secretary; W. C. Kenny, treasurer, and Robert McKay, sales manager. It was through the efforts of Mr. Benedict that the company was organized and work started. The company has a splendidly equipped plant conveniently located, and not since the day work was started has the company caught up on the orders that have come to it with very little effort on its part. In fact, while the writer was with Mr. Benedict, one day, they learned of an architect, unknown to the company, who had been specifying cement brick for building work in five houses for which he recently prepared plans.

The brick made by this company is guaranteed to be water proof, which is one of the strongest points in its favor.

The Center Freese Ice Co. is about to build four water tanks, 25′ by 18′ for the purpose of holding water to feed the ice plant. They have specified that the brick to be used in these tanks be cement brick, and the walls are to be laid up four brick in thickness.

Another company, which is promoting the town of Okadian, on the Interurban railway between Oklahoma City and El Reno, has specified cement brick to be used for facing the stores, depot and such building as they will erect in the city.

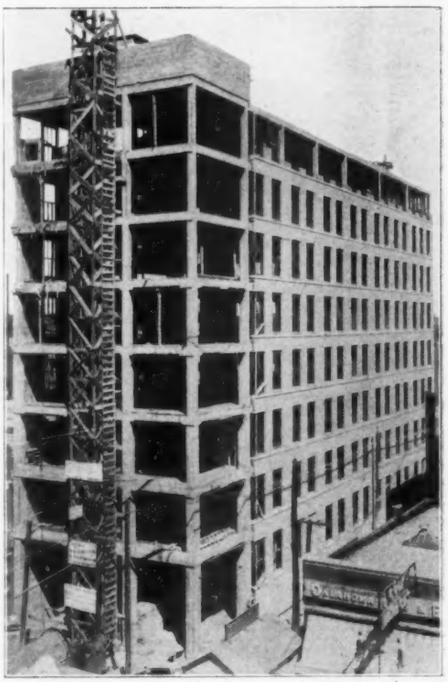
Bricks made by the curing process used by the Oklahoma company, tested by the R. W. Hunt Co. when thirty days old, showed a crushing strength of 109,000 pounds. In the fire test, cement brick, in competition with other brick, were subjected to 2,400 degrees F., after which they were submerged in water. The water proof brick was not in any way damaged by this severe test.

The plant began to make commercial brick on June 15th. The company has two acres of land near the junction of the M., K. & T. and St. L. & St. F. railways. The main building is 48′ by 40′ of 2-story construction. A switch track from the railroad runs into the south end of the plant. Cars loaded with sand, which at the present time is brought from Guthrie, discharge into a pit. Three spiral conveyors, 8′ long, carry the sand into the plant and discharge onto a cross belt conveyor. The spiral conveyor discharges the sand onto a cross belt 35′ from center to center, and this discharges into a bucket elevator. The material is then elevated to the second floor and emptied into a revolving screen 2′ by 6′. Here the various sizes are screened and the sand spouted into a sand hopper of three-yard capacity. The cement storage is on the second floor and the cars are easily unloaded, as the floor of the second story of the building is on the level of the car floor.

In the process of manufacturing the cement hopper is filled and contains four and one-half barrels of cement. Besides these hoppers there is one for colors when the plant is manufacturing colored brick, and a hopper for waterproofing material. Each of these hoppers is equipped with a worm conveyer regulated by sprocket wheels and chains. This delivers the sand and cement in exact quantities in any proportion desired and gives an absolutely uniform mixture. The material is then fed into a 20′ spiral conveyor, which first gives it a thoroughly dry mix, after which the water is introduced through a perforated pipe, and as the mixture passes through the conveyor it receives the water. The wet mixture is then dropped onto the belt, which conveys it to the hopper on the brick machine. The machine used in this plant is of the McIntosh Automatic Sand Cement Brick model. The material in the hopper of the machine is measured into a mold and eight brick are made with each revolution of the machine. Pallets are placed onto the mold and the brick are pressed onto the pallets. A cushion dog catches the pallet and hauls it into the conveyor 100′ long, which runs the entire length of the curing room. There are two tracks in the curing room, which holds twenty-four rack cars each. One man lifts the pallet from the conveyor into the car. Each car holds 960 brick. When the first car is loaded at the far end of the room twenty pounds pressure of steam is turned on so that the process of steaming begins immediately after the brick is loaded onto the cars. Here they are left to cure for twenty-four hours, after which the car is taken on a transfer track out into the yard and the brick left to season the required time.

The equipment for this plant was installed by the Oklahoma & Texas Cement Brick Co., which makes a specialty of installing complete cement brick plants. The company takes the contract for erecting a plant and furnishes it complete, turning it over to the operating company when the first successful commercial brick are made. In this way the patrons receive the work of experts. The Oklahoma & Texas Cement Brick Co. is composed of E. L. Benedict, president; W. K. Hamilton, vice-president and secretary, and W. G. Kenny, treasurer.

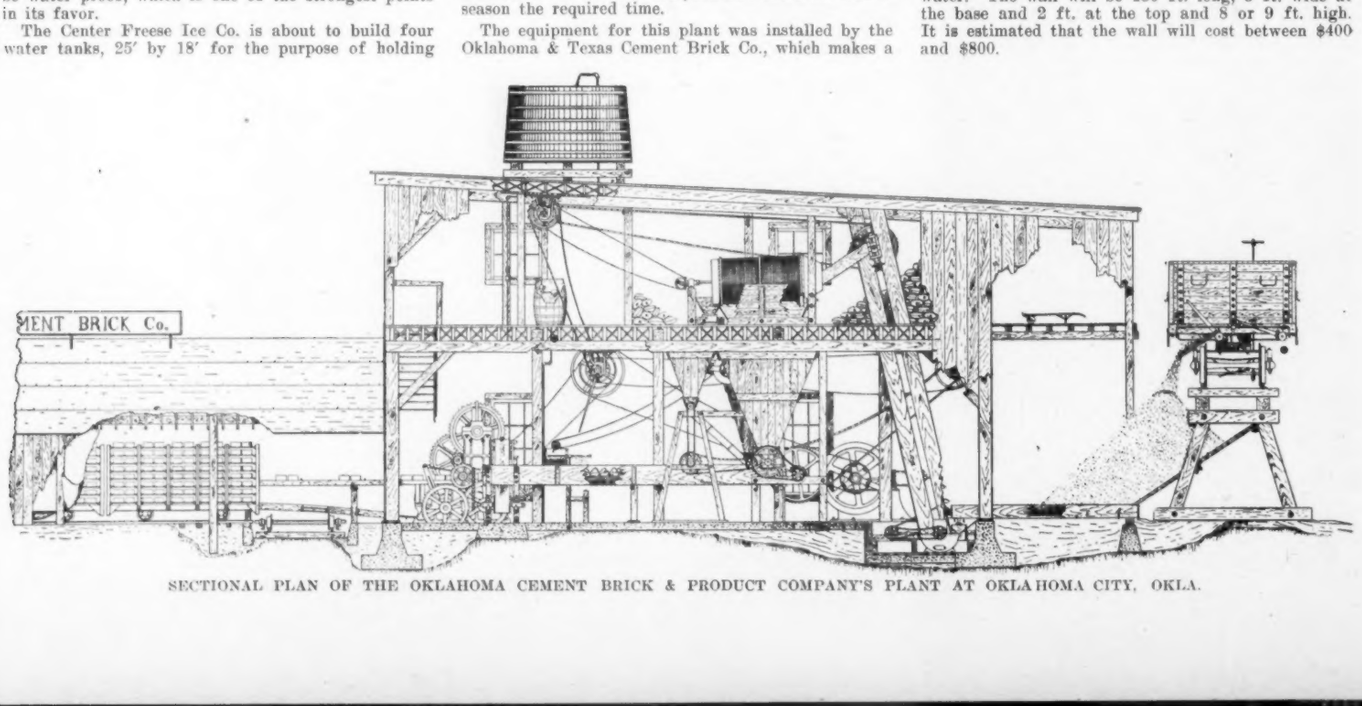
As a substantial investment and one that should pay good dividends, a cement brick plant looks like a safe proposition. The demand for cement brick will increase, and as new companies enter the field to give more publicity to this class of high-grade building material, the demand will grow, as the market has been tried out and found to be an excellent one.



THE BASS & HARBOR BUILDING, OKLAHOMA CITY, OKLA., OF REINFORCED CONCRETE WITH CURTAIN WALLS OF CEMENT BRICK.

Club to Build Concrete Sea Wall.

Cyrus C. Henry, Frank E. Pierson and Chas. H. Talbot have been named by the Pittsfield Boat Club, of Pittsfield, Mass., as a committee of three to build a new concrete wall between the club house and the water. The wall will be 150 ft. long, 3 ft. wide at the base and 2 ft. at the top and 8 or 9 ft. high. It is estimated that the wall will cost between $400 and $800.



SECTIONAL PLAN OF THE OKLAHOMA CEMENT BRICK & PRODUCT COMPANY'S PLANT AT OKLAHOMA CITY, OKLA.

SECOND CONVENTION

Of the Oklahoma Cement Users' and Contractors' Association Held in Conjunction with the Cement Show.

Attendance at the second meeting of the Oklahoma Cement Users' and Contractors' Association, held in conjunction with the cement show and third state fair of Oklahoma, at Oklahoma City, October 4th, 5th and 6th, was smaller than expected.

This is the second meeting of the association this year, since it was organized in February, and the rapid progress it has made is in accord with the spirit of Oklahoma, which is to support a good thing. It was thought desirable by the executive committee to hold the cement show and meeting during the state fair, as many of the members would attend this important event and could just as well take in the two at the one time. It seemed, however, that the members were all busy, which probably accounted for the fact that there were not more present at the meeting; still, the officers were satisfied with the results of the convention and the show.

Secretary D. C. Patterson is certainly to be commended for the splendid work he has done for the association. He has not allowed interest to lag for one moment, and has established the association on a basis which probably no one else would have taken the time or effort to do. Already the membership shows the result of his energetic labors, and the increase made in numbers during the first half year indicates that he is doing good work.

The meetings of the association were held in the evenings so that the visitors would have an opportunity of taking in the state fair as well as the cement show, during the day. The sessions were held in the convention hall of the state fair grounds, and each session was presided over by President R. E. Brownell.

OCTOBER 4 SESSION.

This meeting was called to order at 8 p. m. by President Brownell. In his remarks he said the organization was perfected last February and at that time enrolled forty-eight members. Since then thirty names have been added, making it for the first year the largest association in the industry. The association, said Mr. Brownell, should stand for the best class of work, and for nothing else.

Secretary Patterson then made a brief verbal report in which he said the chief work of his office had been to make plans for the convention, but that he had also tried to figure out the best way of increasing the demand for concrete products and the work of the association. Speaking of the work of the officers, he said the president had assisted him wonderfully, and that the members themselves had been very active. His office has carried on a large correspondence with the members and he found them anxious for information on concrete construction. He felt this was the best time to hold a meeting, though it has cut the first year's work short. He urged on those present the necessity of increasing the membership and thought this could be accomplished by all working together.

President Brownell then introduced Professor C. N. Gould, director of the Oklahoma Geological Survey, a man who has done much for the development of Oklahoma in this line. Professor Gould spoke on the subject of "Where are the people of Oklahoma to get their cement?" His talk was informal and illustrated by the use of maps of the state. He indicated six limestone areas where the available materials were to be had, and said the essentials of the Portland cement industry were the supplies of raw material, transportation and the market. He pointed out in the northern part of Oklahoma, ten or twelve counties containing valuable stone lands varying from a few inches to 50 feet in depth, this ledge of stone being a continuation of the Kansas stone. The second area he indicated is in the northeastern part of the state. The third is in the Hartshorn hills. In places here, the stone is 500 feet thick and extends from the northeast to the southwest, a distance of about 150 miles. The fourth area is in the Arbuckle mountains, and occupies about 500 square miles, containing four ledges of stone of which the Arbuckle is the heaviest. The fifth area is near Ardmore and extends to the Arkansas line. The limestone here contains considerable marl. The sixth area is in the Wichita mountains. There is only a small amount of this stone available for Portland cement, and it is far from a fuel supply. He said that shale was found near the limestone in all the areas and that central Oklahoma abounds in coal, oil and gas. Coal is found in the eastern part of the state, and oil and gas fields are very numerous. Prof. Gould estimated that there is between six and ten billion tons of coal in the state. Oil is to be found in the eastern part in the vicinity of Tulsa and Muskogee. There has been, he said, a useless waste of gas, and steps should be taken to prevent this, if possible. Until 1908 there had been no cement manufactured in Oklahoma, but now there are plants at Ada and Dewey, with a number of other plants projected.

Professor Gould's remarks were very interesting, as he is a man thoroughly conversant with the subject, and he was asked a number of questions, which he answered in a very complete manner.

After this, a question box was opened and a number of questions asked and answered.

President Brownell then gave a brief sketch of the work the city of Oklahoma is doing and of which he is the designing engineer. A speedway is to be constructed around the city, without grade crossings. This will be twenty-seven miles long and 200 feet wide, with a parkway on both sides and two driveways. It will require bridges and culverts. Two dams 1,000 feet long, 69 feet deep, the top of each being 90 feet wide, will be constructed. This work will require an enormous amount of concrete, but it is the intention of the city to have one of the finest speedways in the country.

After several discussions on various subjects relating to the concrete industry the meeting adjourned.

OCTOBER 5 SESSION.

The meeting was called to order by President Brownell, at 8 o'clock. The first announcement was the appointment of committees, as follows:

Amendments Committee—M. J. Reinhardt, James Sykes, F. P. Sutton.

Resolutions Committee—W. J. Grimshaw, W. H. K. Bennewitz, G. W. Young.

Nominating Committee—C. F. Scott, James Sykes, H. G. Newcombe.

M. J. Reinhardt then read a paper entitled "Fire Proof Building Construction."

(This will be published in full, next month.)

Following this C. F. Scott gave a short talk on "Good roads and their value to the general community." Mr. Scott has had considerable experience in the concrete line, and is now devoting himself to the building of roads, using concrete in a large measure. He said nothing built up a community like having good roads and bridges. They enhance values. A concrete roadway is clean, noiseless and economical. He is at the present time laying a concrete roadway in Oklahoma, and the first cost is not greater than that of any other substantial pavement. The cost of maintainance is one of the main items to be considered. A concrete road is easy to travel and affords a good footing for horses. It is an easy pavement to clean, and consequently it adds to the health of the community, because it does not retain dirt. Mr. Scott said he used for the base a five to one mixture and a four to one mixture for the top coat, and corrugates the latter to make it rough. In floating this he uses plenty of water to secure the best results. In concrete pavements he allows a one-inch expansion joint on each side of the road and cuts the blocks into sizes eight feet square. Speaking of concrete culverts and bridges he said they were more economical and could be made more beautiful than any other kind of construction. Mr. Scott's talk indicated that he was thoroughly familiar with the subject, and as he has successfully operated both in culvert and bridge construction, as well as pavements, he spoke from experience.

Next came a discussion on "Waterproofing." Mr. Birn spoke of the results he secured by using hydrated lime, and said if about 10 per cent of this product was used he found it gave as nearly waterproof concrete as could be obtained.

L. V. Thayer thought the best way to make waterproof material is to use plenty of cement. He said that concrete is the best material on earth, and if this had to be filled with substitutes in order to make it waterproof, or to add anything to its qualities, concrete operators had better quit the business. He advocated rich mixtures in order to get the best results.

Mr. Diamond gave an interesting talk on the subject of curing concrete products. He stated that the best results were to be obtained by using the vapor curing system, using steam carrying a high percentage of water.

President Brownell then called on John Fields, editor of the Oklahoma Farm Journal, who said that there is a growing demand for cement on the farm, and farmers need to know more about concrete. The farmer has plenty of time in the winter to do repair work and can do it himself. The legitimate uses for cement should be presented to farmers, and any suggestions that could be made by the association, or anybody else, will always receive the farmers' consideration.

OCTOBER 6 SESSION.

As soon as the meeting was called to order by President Brownell, he called on James Sykes for a paper entitled "Practical Use of Concrete on the Farm."

PRACTICAL USE OF CONCRETE ON THE FARM.

By James Sykes, C. E.

In this paper it is not my intention to go very far into the field of cement usages, but I will try to conform to the title of the paper and explain to the farmers and others who are interested in cement work the extent to which this material may be used. In the first place I do not want to describe the many ways of testing cement or explain what it is, as the material is now almost universally known and a farmer or other user of cement, if he buys some standard brand from a reputable dealer, does not need to test it. I take it for granted that everyone knows what concrete is, viz., a combination of stone, sand, cement and water which on mixing in the right proportions forms a hard stone. Thus, taking for granted that the cement is all right, we have left the sand, stone and water.

The water in every case should be as clean as possible and free from organic matter.

The quality and size of stone varies according to the work and should be the best obtainable. By this I mean that almost any stone except a rotten sandstone is suitable, including gravel. Of course if the gravel be very dirty it should be washed and in all cases the stone should be screened and the dust and fine material taken out.

In regard to the sand, the best kind is a clean, sharp sand, fairly coarse, with some fine to fill the voids. However, if this is not obtainable, the best you have around should be gotten, provided again that it does not contain too much loam or organic matter. An easy way to test this sand is to take an ordinary glass jar, fill it about one-third full of sand and then add about as much water. Put the cover on the jar and shake it up. This will wash the sand, and on being allowed to stand the heavier grains will fall to the bottom, while the loam will rise to the top. After this has stood for about one hour the depth of the loam should be measured and the depth of the sand also. Then by a simple sum in proportion the percentage of loam may be found. If the loam is over ten per cent the sand should not be used at all.

Having thus described the materials before going into a description of the methods of usage, I should like to add a word of caution which if observed will help make the whole work a success.

As you know, working with concrete is not an occupation in which a layman can experiment inexpensively. So do not purchase any cement or stone until you know exactly what you intend to do with it and how you are going to do it. You must also be familiar with the rules governing the mixing and the quantities and proportions to achieve any success. It is not necessary to know the scientific and chemical properties of the work, but the user must have what is termed horse sense and know how to apply it.

Do not guess as to measurements. Don't use less cement than the mixture calls for. Mix thoroughly and then a little more. Put your concrete in place at once and do not let it make its initial set on the mixing board.

If these rules are carried out the user cannot go far wrong, and the result will be that the concrete maker will find his work satisfactory.

Proportion—It will be found far better for the farmer and any other user of cement if he will use nothing but a good concrete wheresoever he places it. Knowing that the proportions are right, and the mixing properly done, the farmer need have no fear of any bad after effects. For efficient work the proportions may be varied from 1 to 5 to 1 to 7, though for a standard a mixture of 1 to 6, that is, 1 part cement, 2 parts sand and 4 parts stone, will do for almost any purpose that may be called for.

Before concrete is laid either in the form of blocks or monolithic a good foundation or sub-base must be laid, the depth varying in accordance with the work it has to carry.

Foundations for houses, barns, etc.—As a general rule the base of a wall of any kind should be at least fifty per cent wider than the wall itself. For instance, a 12-inch wall should have a face of 18 inches and sufficient thickness to prevent settling. In the making of any calculations for the thickness of these foundations a sufficient allowance or factor of safety should be used. That is, say, the load should be calculated and then doubled or trebled, as there are many loads which come on the foundation over and above the weight of the building, such as wind pressure, etc. Another important factor is the necessity of starting below the frost line, or where the soil is soft.

Floors, walks, etc.—Excavation should be made below the frost line and a sub-base of about 6 inches put in, and even more, depending upon the weight and wear the floor is to have. A deposit of 5 inches of concrete, about 1 to 7 mixture, should be laid on this. The top coat should be 2 inches thick, 1 part cement and 2 parts sand. The surface should be sloped so as to drain to the desired point. In stable floors the top should be grooved before it sets to give the animals foothold and to prevent slipping. In the case of walks this thickness of base is not necessary, as a 3½-inch base and 1½-inch top has been found to be satisfactory. If the floor or walk is more than ordinary size it should be laid in sections and the joints filled with tar paper, pitch or sand, to take care of the expansion and prevent buckling.

In the case of storm caves, ice houses and root cellars the ingenuity of the user comes into play as to the amount of excavation that can be saved and the cheapest method of doing it. As it is essential to have these places waterproof, usually some other preparation is mixed with the cement, such as hydrate of lime or some patent waterproofing. As good a waterproof material as I have yet found and which I have used on many occasions is the Sylvester method of using alum and soap.

(Continued on Page 43.)

FROM OUR OWN CORRESPONDENTS

TOLEDO AND NORTHWESTERN OHIO.

TOLEDO, OHIO, Oct. 16.—The closing days of September and the early days of October have been quiet ones in building operations in Toledo and northwestern Ohio. But few new operations have been started in which concrete engineers, contractors or manufacturers are interested and indications point to an unusually light fall. Industrial conditions are improving generally and it is to be hoped that a direct influence will be felt in building lines.

The Federal Creosoting Company, which is erecting a large plant along the Lake Shore railroad west of Toledo, has been experiencing considerable difficulty in setting its concrete footings, owing to finding quicksand in larger quantities than expected. This work is being done by Frank Gorman, of Toledo, under the direction of Devore & McGormley, structural engineers of the Toledo-Massillon Bridge Company, which concern has the general contract for erecting the buildings.

Architects Langdon & Hobly are finishing plans for the new building for the Toledo Lodge of Elks and bids are now being asked for the foundation which is to be of concrete. To what extent concrete will be used in the superstructure has not yet been fully decided, nor has it been determined whether the building will be erected before spring. The foundation, however, is to be finished before freezing weather this fall.

Concrete footing and foundation are now being started for an additional building for the Lion Dry Goods Company on St. Clair street. Plans for this building were prepared by Architects Bacon & Huber, and the general contract has been awarded to Richard Hattersley, who in turn has sub-let the concrete and brick work to Bock & Kuhlman of this city.

Present indications point to the Board of Education delaying work on its two new high school buildings until spring. Bids have not yet been asked for and as both of these structures are to be largely of concrete and other fireproofing, the board prefers not to do this part of the work in midwinter.

Architect J. W. Matz is finishing plans for a church building in East Toledo, on which bids will be received for both concrete blocks and stone. While stone is preferred, it is altogether likely that concrete blocks will be used on account of decreased cost.

Municipal work has been progressing satisfactorily. The contract for paving Emerald street has just been awarded to Peter & Son, of this city. Other street pavings are being advertised and the outlook for late big work is encouraging.

The Board of County Commissioners has up for letting shortly a number of small concrete culverts and at the present time is agitating the question of repairing its own stone roads instead of awarding this work by contract. Commissioner Roy Davis has investigated the matter in various counties where this system is followed, and has recommended that Lucas County at least try the plan, which he says, will result in the county saving at least more than enough the first year to pay for the cost of the machinery necessary to do the work.

The France Stone Company has just acquired some additional property which will be allowed to lie undeveloped until about the first of the year. It is also the intention of the company to move its headquarters to Toledo and conduct operations from this point.

The Buckeye Builders' Supply Company has just taken on the full line of pressed brick of the Hocking Coal and Clay Company and has placed its first shipment on Collingwood avenue, where they will be used for residential purposes.

A well confirmed rumor is afloat relative to the organization of a new builders' supply company in Toledo and while parties interested are not yet ready to have their names connected with the proposition, it is stated that definite decision will be reached in ample time to allow the company to start about the first of the new year.

The Toledo Builders' Supply Company reports a very satisfactory increase over its business a year ago which showed undeniable effects of the financial depression. Peter Degnan, president of the company, looks forward to next year as being one of the best experienced for a long time. The company manufactures the Cresceus hard wall plaster, the sales of which have increased largely during the past year and the shipping points for which have become more distant than ever.

D. A. Hemley, president of the Toledo Pulp Plaster Company, is remodeling his residence on Lawrence avenue. Mr. Hemley complains of a shortage of cars which complaint is being voiced by shippers of all kinds of building material, and all are experiencing more or less vexatious delays on that account, as well as because the railroads are unable to make prompt deliveries to all points.

The W. O. Holst Builders' Supply Company is closing one of the best seasons it has yet had. Christ Beins, city salesman, states that the company will be in better shape next season to handle business than ever before.

The Sanitary Construction & Manufacturing Company, of Terre Haute, Ind., has just secured an option on a site of five acres near Stickney avenue and the Libbey Glass plant, on which the company will shortly begin the erection of a large plant for the manufacture of its product. It has a secret method of manufacturing hard plaster for the exterior of buildings and for floors. Edward S. White, president of the company, is highly pleased with the site and is impatient for the time when work can be started. The first consignment of this material to be used in Toledo is being put in a terrace building under course of erection at Fourth and Oswald streets by Collinge & Kibbee. The particular brand used is known as "Kellastone," and is of a milk white color. It is attracting a great deal of attention and architects who have inspected it look upon it as an ideal building material if it verifies the claims made for it by the manufacturers. In this instance the claims are that it is easy to apply, shortly becomes hard, is not affected by weather conditions and that it will withstand pressure equal to stone. With the erection of this plant, Toledo will have plaster factories as follows: Toledo Pulp Plaster Company, Cresceus plaster, manufactured by the Toledo Builders' Supply Company; Economy plaster, manufactured by the Ohio Builders' Supply Company, and the Fishack Plaster Company.

Anticipating a good building period, all the local supply companies have taken on big stocks of sand and will shortly be in position to take care of all the demands for this material during the winter months when the fleet of sand suckers does not work. Nearly all the sand used in building operations in this territory is furnished by Lake Erie and the Maumee river from whence it is obtained by sand suckers which, through strong pumps, suck up the sand from the bottom of the river and lake. Nearly all the local yards have sand docks where it is unloaded by steam shovels and from thence delivered to various parts of the city by dump wagons.

Hummel & Hildebrand, concrete contractors, report a good business for the season, a large part of which consisted of the laying of cement walks in various parts of the city.

Edward Thal, who for several years was employed in the office of Bacon & Huber, architects, but who some months ago opened an office in the Drummond block, will devote special attention to concrete and will hereafter list himself as a concrete engineer as well as architect.

The Buckeye Clay Pot Company, just organized, has taken an option on a site at Basset and East Woodruff streets, where it contemplates the erection of a factory for the manufacture of clay pots used in the production of glass. Several officers in the Libbey Glass Company are interested in the company which claims to have a secret process for making pots which will have a greater resistance for fire than any now in use. The materials used have not been made public.

The East Side Improvement Association, composed of leading citizens of that part of the city, has approved the request of the Weiler-Berger Company for the erection of a freight depot at the intersection of East Broadway and the Wheeling belt. As stated last month, this company has just been organized to manufacture cement blocks and sewer tile, expecting to devote a considerable portion of its attention to outlying towns and country.

SYRACUSE, N. Y.

SYRACUSE, N. Y., Oct. 16.—Edward I. Rice, coal dealer and owner of a large summer residence at Dorwin Springs, just south of the city, will erect a large factory for the manufacture of concrete building blocks at Dorwin Springs. Work has been started on the building, which is to be constructed of concrete blocks made on the premises. J. C. Lee will be manager of the plant, which will have a capacity of 500 blocks a day. He has already received orders for 25,000 blocks. Mr. Rice will also manufacture novelties of his own invention.

Owen Gallagher, a well-known paving contractor, died at his residence in this city September 29. His funeral was held October 2. Mr. Gallagher had carried out many city paving contracts and was well known and well liked among the city officials.

Under a change recently made in the paving specifications, giving property owners the benefit of competition on all kinds of paving material, owners will receive a rebate of nearly fifty percent on five blocks of paving in McBride street.

Ground has been broken for the erection of a new concrete block building in the southern part of the city for Kelly Bros., coal dealers and grocerymen.

The Stewart Contracting Co. of New York has encountered a serious delay in the construction of the new Onondaga hotel in this city. Work on the Jefferson street front has been delayed several days because of a discrepancy in the specifications and measurements. The structural steel work for the eleventh floor is up and the roof sections will soon be in place.

Contractor Joseph H. Connors of Fulton is engaged in the laying of a new brick pavement at the city hall at Oswego. The work is progressing rapidly.

LOUISVILLE DISTRICT.

LOUISVILLE, KY., Oct. 15.—The building situation in Louisville is good just now, and men in the cement, concrete construction and building supply trades are correspondingly pleased. Though the amount of big building going on at present is not large, there is enough work actually being done to show that prospects are turning into realities, and this has improved the outlook with regard to numerous building projects which have been discussed for several months, but of which as yet nothing has come.

One of the most encouraging features of the situation is the stronger tendency of cement. The price of this staple has been remarkably low, all things considered, for a much longer time than there was any reason for, but it is now beginning to advance and manufacturers say that the demand is a great deal heavier than it has been since the panic.

Among the new buildings mentioned during the past month, a 10-story power building to cost $275,000, has excited a good deal of attention. It is planned for the corner of Fifth and Walnut streets, just off the retail district, and its object is to supply light and power for retail stores.

W. E. Burk, of Louisville, who left here some time ago to take charge of work on a new cement plant in Mexico, has been made vice-president and general manager of the concern. The company is known as the Toltec Portland Cement Company, and its plant, which is being built under the supervision of Mr. Burk, is to be located at Tula, near Mexico City. Mr. Burk is now in Louisville buying machinery. The company takes over cement lands formerly held by the Hidalgo Cement Company, an organization in which J. B. Speed, of Louisville, was interested. The new company was organized at Stafford, Kan., and with the exception of Mr. Burk most of those interested are Kansas men. Mr. Speed is a large stockholder, however. The initial capacity of the new plant will be about 600 barrels a day, and this will, of course, be increased if the field proves a good one.

Announcement has been made of the formation of the West Virginia Clay Products Company, which was incorporated in Charleston, W. Va., with local men as its officers. It is a $200,000 concern, and the following are in charge: W. E. Caldwell, president; A. H. Robinson, first vice-president; Sam P. Jones, second vice-president; R. H. Yates, secretary and treasurer. The company has purchased 153 acres of land near Charleston, located on the Elk river, which empties into the Kanawha, and is navigable the year round. Of this tract 130 acres is composed of clay 18 to 45 feet thick. The clay is the highest grade of No. 2 fire clay, and will be used for manufacturing fire brick, paving brick, tile, terra cotta, and other vitreous products. The plant will be begun within the next few weeks, and it is expected that operations will be started in sixty days. Brick will be turned out at first, and the capacity will be 70,000 a day. As railroad and fuel facilities are at hand, the cost of manufacture is not expected to be large. The company will also use the river for transportation to a large extent. The promoters of the organization believe that they have a fine proposition, and one that will be successful.

The Kosmos Portland Cement Company announces that the situation is vastly improved. "We have sold more cement during the past month than ever before in the history of the company," said an officer of the concern. This was true, it was explained, because the company had a full stock-house, for no more could have been shipped in 1907 than was shipped, because it wasn't to be had. The amount being shipped out now is 25 per cent larger than it has been at any time since the panic. Higher prices are being paid this month than in September, and the improvement

over last month is marked. A good many contracts for a moderate amount of cement have been received, and the local demand is fair. Minor concrete buildings being erected here are using up a considerable amount of cement. Sidewalk work is not rushing, however. The prediction was made that prices will continue to increase right through the winter, just as they did in 1905. F. M. Timmons, sales manager of the company, is in Memphis.

John L. Wheat, of the Union Lime and Cement Company, said that business is active, and that both Lehigh cement and Salem lime are in fine demand. Cement prices are still too low to suit him, as he said that 20 cents a barrel could be added without making the figure too high. He believes that the demand will continue right through the winter, and that next year will be a phenomenal building season. "I am always glad to see a representative of ROCK PRODUCTS," said Mr. Wheat. "It is a great paper."

J. B. Speed & Co. are doing a good business, with the demand slightly in excess of what it has been. "We are not selling a great deal more," Henry Gray said, "as we have been running nearly to capacity right along. I do not look for an increase in price of more than 5 or 10 cents a barrel this season, as it is now pretty late. The big demand, which will deplete stocks and force prices up, is not likely to come until next spring, in my judgment."

Webster Gazlay is now devoting all of his time and attention to the National Concrete Construction Company, after having given two and a half years to the Louisville Water Company, and after seeing the big new filter plant completed under his supervision. Mr. Gazlay was warmly complimented by the officials of the company when he left it October 1. Regarding the business of the National, he said that there is lots of work being done, and that prospects are good. Most of the work in progress has already been mentioned in this correspondence.

Vice-President Streicher, of the National Roofing and Supply Company, said that business is fine, but that just about the usual run of work is being done. This includes foundations, floors and walks. Prices are better, he said. Work will be pushed until cold weather makes it necessary to quit.

Frank Troxell said that there is a great deal of cement work being done, but that competition is so close that he is not doing much of it. S. F. Troxell is doing gravel roofing, and is very busy. Business with him is excellent.

The Kentucky Wall Plaster Company reported business as good, and Mr. Campbell said that it is likely to continue up to the mark most of the winter. B. J. Campbell, a member of the firm, will likely be an alderman by the time the next edition of ROCK PRODUCTS comes out. He has been nominated on the Democratic ticket.

The Southern Wall Plaster Company said that the price of stucco, one of the raw materials for the manufacture of their product, has gone up, but that the increase in price will not affect the price of wall plaster, which has been selling at one figure for years. Business is exceptionally good.

The Ohio River Sand Company is working its diggers day and night and its elevator is running twenty-four hours a day, also. Gravel is pretty hard to get owing to low water. It looks as if business will be good all winter, as work on the sewers will continue for most of that time.

The steel furnaces have started up again and this has made things look good to the Louisville Fire Brick Works. There are no very big orders coming in, it was reported, but they come from all sections, indicating that the renewal of activity is general. Prices are about steady, but are strengthening. The company officials hope to have their plant running at full capacity next spring.

Business is not much improved with Burrell & Walker, though the indications are favorable. Not much building is being done locally, so the trade in flue linings and sewer connections isn't what it might be.

Prices haven't changed any with the Southern Brick and Tile Company, and the demand is steady. The business is satisfactory, and a large amount of the company's output is being shipped.

The Seelbach Hotel Company has decided to spend $10,000 changing its roof garden into sample rooms. The open space will be covered and the rooms made by erecting the division walls. L. A. Lapp, of New York, is superintending the changes.

The James Duff Construction Company, of Cleveland, has been awarded two contracts by the Sewer Commission. They are for the Sections D1 and C of the northwestern sewer, and involve $250,000. The Charles F. Fitch Company was awarded the contract for constructing Section B2 of the same sewer for $80,000, and a similar amount is involved in the contract for Section D, awarded to E. A. Barker & Son. The Barker and Fitch companies are Louisville concerns.

PHILADELPHIA DISTRICT.

PHILADELPHIA, Oct. 18.—There is a brisk, continuous demand for cement in this locality, and dealers are confident the year will be a record-breaker.

H. M. Fetter, second vice-president of the Wm. G. Hartranft Cement Co., says that they are having a continued heavy demand for Portland cement and prices are good.

Richard L. Humphrey, consulting engineer and president of the National Association of Cement Users, is on an extended trip through foreign countries, making a general inspection of building construction for the government.

Edward E. Krauss, assistant to the president of the National Association of Cement Users, reports a big interest in the annual convention of the association which is to be held in Chicago in February.

James F. Tramley, sales manager for the Coplay Cement Manufacturing Co., reports that this year's business will be a record breaker. Prices are steady and there is every indication for a continued increase in demand.

Mr. Alexander, representative of the Whitehall Portland Cement Co., in speaking generally of the cement trade also states that business is exceptionally good and prices holding steady.

This opinion is also shared by Robert H. Thompson, president of the Edison Portland Cement Co., who reports that orders are keeping up finely for this time of year.

L. V. Clark, second vice president of the Lawrence Portland Cement Co., has been unable to attend to business for the past two weeks on account of his mother's death.

The Norfolk Portland Cement Co., a new subsidiary of the American Cement Co., is a valuable asset to the latter, as it has had $100,000 invested in Virginia lands, which have not only been unproductive, but have been actually carried at an annual loss. In return for these lands the company receives $45,000 in cash, which will be applied to the redemption of bonds, and $300,000 in common stock of the new company. The American Cement Co. has issued to the Norfolk corporation $100,000 of its capital stock, in exchange for $100,000 of the 7% preferred stock of the former.

W. J. Patterson has a contract for the construction of a $35,000 residence for Chas. A. Newhall on Chestnut Hill. The plans were drawn by Brockie & Hastings.

Baker & Dallet have completed plans for the residence of Frank H. Moss, on City avenue, Baltimore, to cost about $40,000 and have awarded the contract to W. R. Dougherty.

A contract for a moving picture theatre 51'x189' of brick construction, on Germantown Road above School Lane, has been awarded to Fessimer & Son. The architects are Druckenmiller & Stackhouse. Estimated cost $15,000.

Geo. A. Glenn & Co. have been awarded a contract for the construction of a silk mill at Forest City, Pa., for the Klots Silk Co., of Scranton. L. C. Holden, of New York, designed the plans. The cost is estimated at $72,000.

The Armstrong & Latta Co. is working on the construction of the elevated road for the Philadelphia & Reading railway. Its portion of the contract amounts to about $1,000,000. The abutments and bridges are to be of concrete with granolithic finish and side walls of trap rock. The Schuylkill Stone Co., of Philadelphia, is furnishing most of the stone and the McClinton-Marshall Co., of Pottstown, Pa., is constructing the most of the bridges.

The Delaware River Quarry & Construction Co., with offices in the Arcade building, is rushed with orders for furnishing ballast stone to the railroad companies.

The Pomeroy Construction Co. is estimating on a concrete steel building 173'x300' for the Harlan & Hollingsworth Elevator Construction Co. at Wilmington, Delaware.

Cope & Stewardson, architects, are preparing plans for a 15-story flat building at 310-12-14 South Thirteenth street. The structure will be of the French architectural style of the period of Louis XVI with a frontage of 50' and 250' deep. Estimated cost $600,000.

Wm. Steele & Sons Co. has been awarded a contract for the construction of a 4-story warehouse for A. G. Spalding & Co. at Trenton avenue and Oakdale street. The building is to be of reinforced concrete and brick and will cost $57,000. This company has also been awarded a contract for an 8-story factory 75'x125' at the southeast corner of 12th and Wood streets for the Smaltz-Goodwin Co. Estimated cost $150,000.

Contracts have been awarded to Harrison C. Rea for an 8-story manufacturing building 120'x150' to be erected at Juniper and Cherry streets, for Geo. F. Lasher. Reinforced concrete will be used throughout, with hardwood floors, and the Cherry street front will be of ornamental brick and terra cotta, with polished granite entrance. The plans and specifications were prepared by Chas. Balderston. The estimated cost is $300,000.

The Girvin-Nachod Co., Pittsburg, Pa., contracting and engineering, obtained a charter under Pennsylvania laws on Sept. 29. Capital $10,000.

Lynch Bros. have the contract for building the new Huntingdon street station for the Philadelphia & Reading railway. It is to be of brick and concrete and will cost $18,000.

MEMPHIS.

MEMPHIS, TENN., Oct. 19.—This is proving to be one of the good building months of the year. Supply firms complain in some instances of low prices, but the demand for their product is all right. The Union depot surveyors are at work. It is reputed that Milton Smith, president of the Louisville and Nashville railway, will also bring about the building of a 300-room hotel near the station. Work is now in progress on the eighteen-story sky scraper of the Central Bank & Trust Co. Much residence, business house and warehouse work is in progress.

W. B. Troy, of the Camden Gravel Co., Byrd building, this city, is spending a few days at the gravel pits of his company in West Tennessee.

The De Soto Concrete Co., 218-28 East Mallory avenue, New South Memphis, are doing considerable work in that section of the city. They make cement blocks, caps, piers, walks, etc.

The National Plaster & Material Co. have completed a new factory building on the Belt Line and Nicholas avenue, this city. W. R. Troy is manager.

Architect L. M. Weathers, Scimitar building, is designing considerable reinforced concrete work these days. Among his recent jobs is the Carnivora for the Memphis Zoo. It stands in Overton Park, and was built by Engineer J. A. Omberg, Jr. It is of reinforced concrete, 92'x11', with metal cages.

The Koehler Paving & Concrete Co., 68 North Court avenue, is doing the concrete work and sidewalk work on a number of driveways in the city of Memphis.

Larde & Bro. of McKenzie, Tenn., are doing considerable contracting work in concrete sidewalks and yard curbs. They have done a number of neat jobs in McKenzie, among them curbs for the lawns of J. B. Lawrence and W. E. Reginold.

The Union Sand & Material Co., Tennessee Trust building, Memphis, state that the sand trade is fair at this season. Cement they find to be about stationary in price, with demand holding up very well.

Maurus Bros., tile contractors, Tennessee Trust building, are doing considerable tile work in mosaic, etc.

At a bankrupt sale, the Memphis Mosaic Tile Co. has been bought by the W. J. Northcross Mantel Co.

Otto Hauri, at Paris, Tenn., is doing considerable paving and concrete block work this season, much of the former being municipal work.

The Meacham Contracting Co., of Hopkinsville, Ky., has recently done the floor and basement work on the new bank at Paris, Tenn.

F. M. Murray & Son, Dickson, Tenn., are the one concrete block firm in that town. They built a nice ten-room concrete block residence there some time ago. Also a wholesale house for the Anderson Hardware Co. They are now building a concrete block factory building for the Dickson Ice Co.

J. A. Omberg, Jr., Goodwyn Institute, Memphis, has been awarded the contract for putting in the sewerage and graveling the streets of Trenton, Tenn., and $40,000 will be expended there in the two enterprises.

The mayor and council at Meridian, Miss., has awarded contracts for paving the residence streets there, the total of which approximates $275,043.07. Four different kinds of material were selected—wood block, brick, granitoid and bitulithic. The wood block and brick contract was awarded to the Rubush-Dabbs Construction Co. of Meridian, for $64,630.10, the granitoid contract to Rudolph S. Blome Granitoid Co., of Chicago, for $11,424.35; the bitulithic contract was awarded to the Southern Bitulithic Co. of Nashville, for $198,990.71.

The contract for the new Methodist church at Pocahontas, Ark., has been let to Williams & Phillips, of Corning, Ark., for $4,000.

Dr. W. A. Nailling, of Union City, has received the plans and specifications for the new Nailling block to be built in that town as a store and office building.

Murch Bros. Construction Co. of St. Louis, which will build the skyscraper in Memphis of the Central Bank & Trust Co., has opened a branch office in the Porter building, that city. The building will be 18 stories and contain 155 rooms. The construction to be of steel, first two stories to be in marble and the re-

maining ones in brick and terra cotta. All floors are to be of reinforced concrete.

Olson & Lesh, Royal building, Memphis, have been awarded the contract for the erection of the splendid club building for the Young Men's Hebrew Association and for the Rex Club jointly. The contract price is about $75,000. The building will stand at the intersection of Dunlap street and Madison avenue. The plans were drawn by Architects Jones & Furbinger.

Architect N. M. Woods, Jr., is working on the architectural designs for the Exchange skyscraper.

The city council at Greenwood, Miss., has let the contract for nearly five miles of sidewalks and crossings to the Oxford Concrete Construction Co., of Oxford, Miss.

BALTIMORE.

BALTIMORE, MD., Oct. 18.—There has been little change in the cement market here during the past month and the indications are that the conditions will remain as they are until after the winter months. The dealers still complain of low prices and are striving to get a higher standard, but it seems a hard matter. The small dealers are the ones who seem to be cutting prices and as the larger men always meet the cuts it causes a continual war among themselves.

Considerable work is in progress, but the amount of fireproof construction has fallen off in the last month. This will not last long, however, because there are a number of large improvements contemplated and the work will be well under way during the winter. One of the most important works that cement men are looking forward to is the additional contracts to be let in the spring for the extension of the sewerage and dock system.

The contract for the construction of the new 15-story addition to the building of the Fidelity & Deposit Co. of Maryland will be the largest building operation in the city during the winter. This will be awarded within the next two weeks by the architects for the building, Baldwin & Pennington. Several other smaller warehouse structures to be built of concrete will soon be under way, and a considerable amount of paving is to be done during the winter months.

H. B. Warner, sales manager of the Maryland Portland Cement Co., says he is looking for better conditions in the cement market by next spring, when he thinks prices will go up and there will be plenty of work to do. "Security Portland cement," he said, "is being used on all of the most important works in the city and there is a steady demand for it."

A contract was awarded a few days ago for the construction of the new Harriett Lane Home for Crippled Children to be built in connection with the Johns Hopkins hospital at a cost of over $200,000. The Noel Construction Co. was the successful bidder, and the work of construction has already begun. Plans for the building were made by Architects Wyatt & Nolting and call for a modern fireproof structure to be five stories high, with the latest hospital improvements. The ground dimensions of the building will be 134 by 161 feet and there will be a large pavilion surrounding the main structure. The interior will be so arranged as to give plenty of light and air, and will be equipped with the most modern plumbing and fixtures. The style of architecture will correspond with the other buildings of the hospital group.

According to the monthly report of Building Inspector Preston, building operations in the city during the month of September exceeded in value by over two-thirds those of the previous month. As usual the principal kind of construction was the erection of two-story houses in all parts of the city. The total cost of the new improvements during the month amounted to $861,265.20, allowing 20 per cent for undervaluation.

The Charles McCaul Co. of Philadelphia has nearly completed the building of the new addition to the United States post office building at Fayette, North and Lexington streets. The improvements consist of a two-story and basement granite structure to be used for a mailing department and a receiving and delivering station for all mails. A street car line will pass through the main building so as to facilitate the handling of the railway mail. All of the stone work in connection with the building is about completed but considerable masonry is yet to be laid on the outside. The improvements will cost about $150,000.

The city has awarded a contract to James F. Farley to build a new engine house at 316-318-320 South Caroline street, to cost about $26,000. The building will be a two-story fireproof structure the dimensions of which will be 28 by 99 feet. The walls will be brick with terra cotta trimmings and the floors and foundations will be concrete. Plans for the structure were made by Architects Charles Cassell & Son.

BUFFALO AND VICINITY.

BUFFALO, N. Y., Oct. 14.—Among the recent bidders for asphalt street repaving work in Buffalo were the German Rock Asphalt and Cement Company and the Barber Asphalt Paving Company.

Reinforced concrete will be used in the new plant to be built by the Burke Construction Company, of Buffalo, for the De Schaum-Hornell Motor Company, of Hornell, N. Y.

Morris & Allen, Buffalo contractors, have the contract to build a plant for the McKinnon Chain Company, at Tonawanda, N. Y.

The F. V. Brotch Company, of Rochester, N. Y., have the contract to improve several highways in Erie County, N. Y. Upward of $200,000 will be expended on the proposed improvements.

Crossett & Lloyd, Binghamton, N. Y., contractors, have the contract to build a reinforced concrete creamery in Conklin, near Binghamton.

A recent report from Schenectady, N. Y., says: "The Delaware & Eastern Railway has awarded the contract for the construction of the portion of its line extending from Grand Gorge to Middleburgh to the Dominion Construction Company, of Pittsburg. The amount of the contract for the construction of this thirty-six miles of the line is said to be $1,500,000."

City Engineer Fisher, of Rochester, N. Y., has expressed the opinion that concrete electric light standards may be in use shortly in and about the parks in that city. He believes that concrete poles are attractive and not unsightly as are wooden poles, and are as strictly utilitarian as are the iron standards. The further argument is made that the concrete is longer lived and cheaper in the first instance.

The Franklin Construction Company, of Franklin, Pa., will construct a reservoir at Bradford, Pa. The bid is $66,000 with excavation extra.

Capt. Dana Jewell has received at Olean, N. Y., plans for a new administration building and armory.

The contract for laying the intake pipe and constructing the intake crib for the new waterworks at Niagara Falls, N. Y., is being rushed by the Buffalo Dredging Company.

Plans for the Alberta, Can., Parliament buildings were prepared by A. M. Jeffers, architect to the Alberta Legislature, and John Chalmers, structural engineer, under the supervision of William Fingland, structural engineer and architect of Winnipeg. The plans were finally revised by Prof. Nobbs, of McGill University, Montreal.

It was announced a few days ago that up to date building permits aggregating $13,000,000 had been issued in 1909 by the architect's department of Toronto, Can.

Reinforced concrete will be used in the extension of the plant of the Pierce Motor Car Company, of Buffalo.

According to a report from Bradford, Pa., James H. Corbett has a contract to build a 40-mile extension to the lines of the Pittsburg & Shawmut Railroad Company.

Shellburg & Lindquist, of Jamestown, N. Y., have a $37,900 contract to build a municipal hospital in that city.

BIRMINGHAM AND VICINITY.

BIRMINGHAM, ALA., Oct. 19.—Every supply house in this district is overcrowded with orders for material, but they are unable to fill them on account of the slowness of the railroads in bringing in freight. For about three weeks the receipts of sand, cement, etc., have been very light, most of the cars being used for shipments of coal and cotton. This has caused serious results, as some building operations had to be discontinued for a while, on account of lack of materials. In fact so bad have conditions grown that the supply men are threatening to appeal to the Railroad Commission for relief.

The Jefferson Brick Co. is about to close large contracts for material with the A. B. & A. railroad, and the Tennessee Coal & Iron Co.

The Schillinger brewery property on Avenue C and Twenty-second street has been sold to a company which will erect a modern refrigerating plant on the site.

Connors & Co. are building a 2-story brick building on Sixth avenue and Nineteenth street, at a cost of about $30,000.

The Southern Bithulitic Co. has just signed a contract with the city of Meridian, Miss., for $200,000 worth of street paving.

The Birmingham Supply Co., whose specialty is Vulcanite roofing, is furnishing every blast furnace and great mining corporation in this district with Vulcanite. Among the big jobs may be mentioned the plants of the Alabama Consolidated Coal Co., the Southern Steel Co., of Gadsden, and the Martin Cracker Co., of this city.

Mr. Smith, manager of the Carolina Portland Cement Co., had the following to say on being interviewed: "Business is improving day by day and we anticipate a heavy demand for lime, cement, sand, etc. We are at present supplying our Standard cement on the West End paving contract, and it is estimated that fully 15,000 barrels will be used on this job. The Tennessee Coal & Iron Co. is placing heavy orders with us for material to be used in improvements at its Ensley plant."

Although C. M. Burkhalter, the contractor, has not bid for any work during the past month, he has just signed seven contracts.

Work on the building of the 3-story warehouse of the Amzi Godden Seed Co. has been resumed after a delay of a few days on account of inability to get material.

Davis Co.'s rock crushing plant at Brookside is kept continuously working, as the firm has big contracts with Allen & Co. and Chas. H. Mason.

At the state fair in this city some very creditable exhibits of building materials were made. Notable among these was the showing of the Sibley-Menge Pressed Brick Co., the Jefferson Co., which exhibited an entire concrete house, and the Sherwin-Williams Co.

Two large apartment buildings have been opened for tenants in this city. One is the 16-story Empire and the other the 7-story Chamber of Commerce. The former is said to be the most beautiful office building in the state and one of the finest in the entire South. The exterior is of terra cotta and the interior of marble.

ST. LOUIS.

ST. LOUIS, MO., Oct. 16.—Evidently hard times have been "relegated to inocuous desuetude," especially by many manufacturers—notably building materials and all kinds of iron and steel products. The problem now is not how to get business, but how to fill orders with reasonable promptness, and also how far ahead it is prudent to book them on the basis of present market prices, since a further advance in raw material would wipe out the present margins. There are, it is true, some industries where the manufacturer controls the raw material, but this is the exception, not the rule.

The close of the month of September showed, according to Building Commissioner Smith, that there was a gain in St. Louis of over 20 per cent compared with the same month in 1908, in building operations.

The Building Industries Association is rapidly filling the vacant space in its exhibit room. The exhibits already on display are varied and enable the lay visitor to obtain valuable pointers regarding the materials and devices he may desire. Architects are beginning to appreciate the advantages these exhibits offer and are bringing their patrons to view them.

An association of prominent citizens has been formed for the purpose of raising a fund of $500,000 for offering inducements to manufacturers to come to St. Louis. At the initial meeting seven gentlemen subscribed $10,000 each and since then another $10,000 subscription has been added, making a total thus far of $80,000 for this object.

Boller & Hodge, the New York engineers who prepared the plans for the new municipal bridge, have appointed Brenneke & Fay, the firm of local engineers, to act as their representatives and to supervise the construction of the bridge. They will also prepare the plans for the approaches. The estimate of cost on the highway approaches is $1,000,000, or nearly one-third of the whole bridge appropriation. The firm of local engineers have built a switch from the Southern Railway to the river at the bridge site at East St. Louis and have about completed their working shops. Several carloads of material have been delivered on the ground and work is progressing on the first caisson preparatory to starting actual excavation. The contract for the steel for the superstructure, amounting to $2,000,000, will be let before the year ends. The Mississippi Valley Bridge & Iron Co. is the general contractor. There are to be five barges built to be used in floating materials to the location of the piers to be constructed in the river, of which there will be two, 35x90 feet and nearly 150 feet high.

The Southern Realty & Financial Co. is to build a twelve-story building on the northwest corner of Sixth and Market streets. This improvement is to be an addition to the American hotel at Seventh and Market streets and when completed the addition will be larger than the original building. The plans are in the hands of F. C. Bonsack, architect, and the new structure will conform to the American hotel style, the exterior of which is of white enameled terra cotta.

It is proposed to have a roof garden, a fountain and other attractive features. The total cost of the land and the new building will reach the sum of one million dollars.

Another office building is being planned for Broadway on the vacant lot adjoining the new La Salle building, to cost upwards of one million dollars, including the site. The C. L. Gray Construction Co. and others are interested in the enterprise. The lot is 102 feet deep.

The Fullerton estate has purchased 618 Pine street in order to secure an additional entrance to its sky-scraper, which it is deemed will increase the value of this property upwards of $300,000. The lot has a frontage of 23 feet. Work on the improvement will be begun in the near future.

The Bank Realty Co. will erect on the corner of Grand avenue and Herbert street a three-story building for the North St. Louis Savings Trust Co. The structure will be faced with gray brick and terra cotta. Edward F. Nolte is the architect.

Mr. Steeg, sales manager of the Acme Cement Plaster Co., states that business is actually phenomenally good and prices are better. All the company's mills are being run at full capacity to supply the orders for hard wall plaster which are coming from all sections of the country, though heaviest from the middle west.

R. V. Steele, sales agent of the Acme Woven Wool Lath Co., reports that the demand for the new style lath is increasing rapidly. Among the sales in local territory is a contract to supply 55 houses.

The Continental Portland Cement Co. states that the demand for its cement is excellent. The company is engaged in making some changes in its plant to facilitate production.

F. P. Boyd, vice president and general manager of the Merrimac Portland Cement Co., reports that the company has just closed a contract with the M., K. & T. railway for 15,000 cars of filling-in sand to be delivered within one year. The company will be obliged to secure 150 gondola cars for switching the sand from its barges to the site of the proposed improvements in North St. Louis.

KANSAS CITY AND THE SOUTHWEST.

KANSAS CITY, MO., Oct. 16.—The election of G. G. Gheen as president of the Bonner Portland Cement Company, to succeed W. H. Caffery, apparently did not settle the troubles of that company, as the stockholders and creditors were unable to get together and do anything, so a receiver was asked for and Judge John C. Pollock, of the Federal Court in Kansas City, Kan., appointed Henry McGrew to that place. According to the statement of A. L. Cooper, attorney for the company, the receiver was appointed with the express understanding that he was to cooperate with the stockholders in an attempt to reorganize the company, and to act as a guardian for the assets. Upon sizing up the situation at the plant Mr McGrew found that there was some 40,000 barrels of cement on hand, and that a large amount of clinker was ready to grind, so he asked and received an order from the court to operate the plant. He is now marketing the cement and says he feels sure that the operation of the plant for a few weeks will clean up the indebtedness, which only amounts to something like $175,000, while the holdings of the company are said to be worth at least $500,000, and cost much more than that. It is believed by those in touch with the subject that the company will be reorganized and will then become one of the steady producers in the cement line in this section of the country, as it is well located, being near to Kansas City and at the same time in reach of plenty of gas and material. Bonner Springs, where the plant is located, was rather blue for a while after the plant shut down.

Another cement company reported to be in financial trouble is the Chanute Cement and Clay Products Company, of Chanute, Kan., and Bronson, Mich. This company has never completed its plant in Chanute, although it is reported to be nearly done. There is a tangle which involves the promoters, as the stockholders declare they are unable to find where the money secured from the sale of stock has been spent. The president of the company, J. F. Townsend, of Akron, Ohio, recently left for an absence of a couple of years in Europe. The secretary is J. F. Hutton, also of Akron. The petitioning creditors assert that the officers of the company have in their possession proceeds from the sale of bonds for $750,000 which have not all been accounted for. The stockholders are scattered all over the country, but a considerable quantity of the stock and bonds were placed in Kansas. W. F. Allen, of Chanute, is now in charge of the property, under appointment by the Probate court of the county, and C. B. White, of Fort Scott, Kan., has been appointed receiver by the Federal court at that point.

The teaming situation has improved greatly, owing to the fact that the cooler weather makes it possible for each team to accomplish more in a day than it could in the hot season. There is still a very urgent demand for teams to haul material to jobs, but it is being nearer cared for than was the case a couple of months ago.

Brick prices are holding steady, and there is little indication of any decline, although there is more brick being offered at this time than can be disposed of. This is especially the case with the product of the local plants, which is far from having as ready sale as Kansas gas burned brick, owing to the fact that so many architects are now specifying the latter variety.

The demand for lime, plaster, etc., continues to be steady and the business is fully up to expectations. Cement is being sold in large quantities, and the coming winter is going to develop a big local demand, if work is begun on the big viaducts projected over the Belt Line, to do away with all grade crossings. Despite the fact that there is a good demand for this product coming from all directions and an ever increasing local demand, it seems to be no trouble for any of the companies to take on a few big orders and be able to ship them promptly, which indicates a good stock of cement on hand and ample facilities to take care of all the business that comes in.

The Eleventh Street Building & Hotel Co. has been incorporated with a capital stock of $350,000, for the purpose of erecting a ten-story reinforced concrete and steel building to contain 400 sleeping rooms and to be used for hotel purposes.

Parties in Independence, Kan., are making great efforts to obtain the removal of the Sycamore plant of the Pittsburg Brick Co. to that point. A bonus is now being collected to offer the company, and Robert Nesch, president of the company, who is now in Europe and will not return before November 1, will settle the matter as to removal as soon as he comes back. As the bringing of gas from Oklahoma will put the Sycamore plant in a position to get plenty of fuel at its present location, it places Mr. Nesch in the position of being able to operate the plant at whichever point he considers to be best from a financial standpoint.

Richard Grusser has been awarded the contract to erect a two-story brick and stone store building at 1730 Main street, to cost $15,000, by the George Muehlebach Brewing Co.

The Velie Automobile Co. has purchased a site and will erect a brick, stone and cement garage and supply house at Thirty-third and Main streets, to cost $20,000.

The Eisentraut Co., of this city, report the letting of the contract for the school building in Julesburg, Colo., to J. F. Wrenn, for $18,533.

Mrs. M. C. Wilder is about to let the contract for a garage and apartment building on the corner of Fifteenth and Harrison streets for about $20,000.

The following contracts have been awarded on the Masonic Temple: steel to J. L. Bartlett Co.; reinforced steel to Builders' Material Supply Co.; brick work to John Seddon. Edwards & Sunderland are the architects.

W. E. Brown, of this city, has prepared plans for a $25,000 school building to be erected in the Mount Washington district, to be made of brick and stone.

Smith, Ren & Lovitt, architects of this city, report having let the following contracts for the high school building in Okmulgee, Okla.; general contract to J. H. Brocker, of Tulsa, Okla., for $35,977; heating and plumbing, Lewis & Kitchen, Kansas City, for $8,645.

It is planned to construct a reservoir at the county hospital with a capacity of 18,000,000 gallons of water, and the project is ready for bids.

Maurice Berkowitz, of the Berkowitz Envelope Co., will erect a five-story factory building on the Belt Line to cost $100,000.

Louis C. Dessert is soon to begin the erection of buildings to cost about $50,000 on lots he owns near the new Union Depot site.

The Land & Agency Co. is having plans prepared for twelve dwellings, to be erected near Fortieth and Main street, and to cost about $4,000 each. They will also build three houses to cost $6,000 each.

The contract has been awarded for the new St. Agnes Catholic church in Springfield, Mo. It will cost $30,000 and be constructed of red brick, stone and terra cotta.

The Knights of Pythias are to erect a home in Springfield, Mo., to cost $100,000.

The sales office of the Bonner Portland Cement Co. has been moved from the Long building in this city to 713 Minnesota avenue, Kansas City, Kan., where the receiver is in charge.

The Ash Grove Lime and Portland Cement Co. has the contract and is furnishing the Portland cement being used in the Gates building, corner Tenth and Grand avenue. This building will use 2,000 barrels. On this, the same as on other buildings making use of its cement, this company is making tests of the strength of the concrete mixture, having provided molds in which a cube is molded from the material used in the building just as it comes from the mixer, and after the proper seasoning the strength tests are applied and a report made.

THE NORTHWEST.

MINNEAPOLIS, MINN., Oct. 18.—The approach of fall has served to discourage building to a limited extent, but there is always a great deal of late work under way, and this season will see as much as ever and probably more, for there are a great many who are anxious to get structures completed and who have started excavation and foundation work at a time when the end of street work has released a number of laborers who were engaged on that through the summer. This has been found to be quite satisfactory, for the men are anxious to work, and the amount available is not so large as during the warm weather.

A large number of good-sized buildings are in sight in St. Paul and Minneapolis and both cities are expected to show a heavy gain in the totals over a year ago. Building materials are in good steady demand and promise firm prices in all directions. All classes of materials have had a better season. Stone, brick and concrete dealers have all had an increase in business and look forward to a good season next year.

The brick business has been lagging for a couple of seasons, but this summer has been doing better and promises still better another year. Some large sales of brick have been made recently, showing that it has not become ignored as a substantial building material. Building material firms are gradually getting their prices back, but some of them have been slow to take advantage of the situation and to increase their values as the occasion offered.

The finishing touches are being put on a new building code for the city of St. Paul to bring the one now in effect down to date. Like those of many other western cities the old code is a series of amendments, changes, extensions, alterations, revisions and exceptions until it has long since lost all sense of continuity. The new document, as planned, will be a marked advance. Fireproof buildings are required for theaters, hospitals and public institutions generally. All structures in excess of six stories are also to be fireproof.

The building of the United States Gypsum Company at the Minnesota state fair attracted a great deal of attention from people interested or engaged in building lines. The building was constructed almost wholly of gypsum products, their Gypsinite replacing studding; plaster board was used in place of wood lath, while Adamant furnished the exterior plaster and the floor was of concrete. The building was a good exemplification of stucco work.

Word is received from St. Louis that a company is being formed there to establish a barge line of freighting on the Mississippi river to the Twin Cities. Building materials, lime, sand, plaster, cement, stone, brick and other articles would get low rates by such a line. There is a great deal of interest in the Northwest over the revival of river freighting, and it is hoped that the company will carry out its project and have steel barges ready for business in the spring.

The American Clay Products Manufacturing Company, of Minneapolis, has recently filed articles of incorporation and proposes to engage in the manufacture of pottery and all kinds of clay products. Louis F. Mettelman is president of the company and Charles R. Parker secretary and treasurer.

The Minneapolis Builders' Exchange has lately issued a new list of its membership, with their addresses and telephone numbers. It is made in the shape of a hanger for attaching to the wall and affords a complete and handy list of building firms.

The Board of Park Commissioners of Minneapolis has adopted a prize design for an artistic bridge to be constructed over a park canal between Lake Calhoun and Lake of the Isles. The design is by H. Lincoln Rodgers and Guy Vrooman, of New York.

Ernest C. Haley, a Minneapolis architect, has recently returned from a month's tour on the Pacific coast.

A. H. Stem, a leading architect of St. Paul, was a member of the committee which had in charge the selection of a silver service for the battleship Minnesota and was among the number to attend the presentation early in the month.

Building Inspector Houghton, of Minneapolis, is highly pleased over the notable gain in fireproof construction this year. For nine months of the year the total was in excess of $2,550,000, which shows a gain of $1,100,000 over all of last year.

A booklet containing the Minneapolis building code, handily arranged with marginal classifications for ease of finding the details, has recently been published.

The Minnesota State Association of Builders' Exchanges will hold its annual meeting December 8. This organization has taken a deep interest in the problem of employers' liability, and a report may be expected at this meeting as to progress in this direction. A committee was named by the last legislature to look into the matter, and especially the situation in foreign countries. George M. Gillette, who presented the matter at the last convention of the Asso-

ciation of State Builders' Exchanges, is one of the committee, and will doubtless give a report as to the progress made.

The building permits in St. Paul to October 1 show a total of $8,633,967, a gain of $3,682,985 over the same months of 1908, or 74 per cent.

The Twin City Brick Company, of St. Paul, has completed a new plant for the manufacture of interlocking terra cotta facing blocks. The blocks are made in a wide variety of colors and sizes, are clay burned, vitrified and impervious. They are manufactured under patents owned by this company. The plant has a present capacity of 9,000,000 facing blocks, but can easily increase this to double. The company claims for these block a saving of 50 per cent in the cost of laying, 40 per cent in freight and 40 per cent in the cost of hauling. This company has also engaged in the manufacture of drain tile and is starting an energetic campaign.

Kinney & Halden, Minneapolis architects, have prepared plans for a handsome city hall building for Coleraine, Minn., on the Mesaba iron range. It will be of pressed brick, cut stone and terra cotta construction, modern in every respect. The cost, complete, is to be about $40,000.

C. F. Haglin, of Minneapolis, received the general contract for the erection of a seven-story building for the Studebaker Bros. Manufacturing Company in Minneapolis, at Sixth street and Second avenue South. It will be of fireproof construction, brick and concrete, and cost $100,000. Long, Lamoreaux & Long, architects.

Brown & Zenz, of Minneapolis, received the general contract for the erection of the addition to the Salisbury & Satterlee building (furniture manufacturers) Minneapolis. The work will amount to $50,000.

N. P. Fransen & Company, of St. Paul, received the general contract for the erection of the new cottage at the state insane institution at Hastings, Minn., at $41,744.

Nels Bruce received the general contract for the erection of the apartment building at 116-122 Oak Grove street, Minneapolis, for Mrs. Nina Wells Tibbatt. It will be of pressed brick construction, modern throughout. Cost, $75,000.

Hennepin Avenue Methodist Episcopal Congregation, of Minneapolis, has directed Edwin H. Hewitt, architect, of Minneapolis, to prepare plans for a handsome new church to be erected at Tenth street and Hennepin avenue, to cost about $250,000. No details have been settled upon. The plans are to be out about December 1.

Collins Bros., of Rock Island, Ill., have been awarded the general contract for a five-story addition to the warehouse building of the Minneapolis Moline Plow Company in Minneapolis. Cost $75,000. It will be of red pressed brick and mill construction.

The Minnesota Club, of St. Paul, is having plans prepared by Clarence H. Johnston, architect, St. Paul, for a handsome club building, to be four stories and basement, 90x150 feet in size, pressed brick and terra cotta construction and fireproof throughout. Cost $300,000.

Kees & Colburn, Minneapolis architects, are preparing plans for a substantial factory building for the Minneapolis Sash and Door Company. It will be 163x132 feet, five stories. The first story will be of reinforced concrete construction, and the upper portion will be mill construction. Cost $90,000.

THE PACIFIC COAST.

SAN FRANCISCO, Oct. 12.—There is considerably less building work in San Francisco now than a month or two ago, as the rainy season is beginning and builders as a rule prefer to wait until the end of the wet weather before starting new work. The total of building permits for September was $1,785,611, compared with $2,186,06- for the preceding month. One reason is that the urgent need caused by the fire has about passed away. While large vacant spaces still remain in the business and former residence districts, the city has expanded over a larger territory, and it will probably be several years before the central portion is fully built up.

Such prompt work was done by the Healy-Tibbetts Construction Co., concrete and crushed rock contractors, on Pier 38, that the firm earned a premium of nearly $9,000 on the job. The work altogether cost $289,000. The pier, which is 650 feet long and 130 wide, has been leased to the Alaska Packers' Association. It is entirely housed in a steel and concrete shed.

The Standard and Santa Cruz Portland Cement companies, operated by the same interests, are both putting out all the cement they can make, and are selling most of it without difficulty.

The Cowell Portland Cement Co. is trying an entirely new experiment for the Pacific coast, that of shipping cement in paper bags. A lot of their Mount Diablo brand has been received here in such packages, and the results so far seem to be fairly satisfactory.

Richard Keating & Sons, concrete contractors, are working on the new building of the Union Trust Company at Market and O'Farrell streets.

A. L. Emery and W. C. Bass of this city have been on a visit to the San Juan Portland Cement Co.'s plant at San Juan, Cal., to make an estimate of the cost of completing the plant.

The Arrowhead Lime Co. has been incorporated at Los Angeles, with a capital stock of $50,000, by R. N. Loucks, P. S. Postel and W. O. Rogers.

Foreign cement is being brought into this market in larger quantities than for some time past, coming principally as ballast in sailing vessels, 15,140 barrels arriving this week on the bark St. Louis.

New good roads projects are coming up in all parts of the state. There is keen competition for the San Joaquin county contract, which will be let in a few days, for the first twenty miles of a 241-mile system to be paved with asphalt macadam. Contracts are also to be awarded for a large number of concrete culverts in connection with the road work. Colusa county is constructing a "model mile" under the direction of Government experts, and will soon vote on an issue of $500,000 bonds for additional road improvements. A project involving the expenditure of $1,000,000 is also coming up in San Mateo county.

Concrete has received something of a boost from Australian officials, who, in response to inquiries made by the local Harbor Commissioners regarding eucalyptus, state that their experience discourages the use of timber for piling in harbor work.

Specifications have been received for the construction of concrete barracks and hospitals in connection with the government drydock at Pearl Harbor, T. H., and it is believed that the contracts will be let within ninety days.

The contract for 380,000 tons of rock, to be delivered at the mouth of the Columbia river for the government jetty, has been awarded to the Columbia Contract Co. at a price of $1.12 per ton. This company held the jetty contract last year, and has a large fleet of barges carrying rock.

The Silica Products Co. of Fruitvale has been incorporated in Oakland, Cal., with a capital stock of $60,000, by Thomas Holden, C. E. Smith, J. A. Holden, H. P. Ross and others.

The Reardon-Crist Co. has taken the contract for concrete and cement work on the new Y. M. C. A. building in Oakland, Cal., for $20,000.

The authorities of Amador County, Cal., have purchased a Dodge rock crusher.

A contract for plastering the new Sheridan school building in San Francisco has been awarded to Gus Johnson, for $12,445.

The American Fork Cement Pipe & Stone Co. has been incorporated at Salt Lake City, Utah, with a capital stock of $10,000, by E. H. Stout, A. R. Stout, W. O. Sperry, and W. D. Edmonds.

The city of Los Angeles is negotiating for a lease on the San Dimas rock quarry.

The M. T. Clark Co. has taken a contract for concrete work on a five-story concrete building for the Manlerson Co., for $6,500.

The Liquid Asphalt Roads Co. has been incorporated at Los Angeles, with a capital stock of $50,000, by A. M. Ellis, T. F. White and C. McLain.

Plans have been completed for a new reinforced concrete jail at Independence, Cal., to cost about $12,000.

NASHVILLE AND THE SOUTHEAST.

NASHVILLE, TENN., Oct. 19.—Building circles report a good activity the last few weeks. Prices are holding up and much new work is in prospect.

T. H. Evans has been elected secretary of the Nashville Builders' Exchange, to succeed Haynes McFadden. This institution will shortly move to new quarters in the Noel block. Mr. McFadden has gone to Atlanta to work on the Southern Banker.

The Nashville Bridge Co. of this city has been awarded the contract to build a bridge over Duck river, at Little, in Hickman county, Tenn. The price is $12,600.

The contract for laying the sidewalks in Carthage, Tenn., amounting to about 35,000 square yards, has been awarded to Cunniff & Stone, Cole building, Nashville, at the price of 10½ cents per square foot. There were eleven bids received on the work.

Agerton & Robertson Roofing Co. of Nashville has been awarded the contract for the tile roofing on the M. L. Fletcher residence on Eighteenth avenue. The firm is doing considerable concrete work about town.

R. L. Cash & Co. of Nashville are building a concrete bridge at Whitebluff, Tenn.

Preparations are being made at Johnson City, Tenn., for the development of a depository of roofing slate, which covers more than 100 acres of land along the foothills of Bay's mountain, south of Kingsport. Capt. Thomas Evans, of Atlanta, and associates have options on the land.

CHICAGO.

CHICAGO, Oct. 22.—This month has been a busy one among the men in the cement trade. The demand for this material has been greater than any preceding month this year, with indications that present conditions will continue to the close of the season and make it one of the most satisfactory years as far as volume of business is concerned. There was a slight falling off in orders the forepart of this month during the cold snap, which usually has the effect of checking the demand and halting many public improvements, but as warmer weather is setting in the demand has again jumped to the high-water mark which has characterized the conditions of this month. There is no anxiety felt by the trade regarding shortage of cars delaying shipments, as the railroads have taken good care of the cement industry thus far, and the feeling exists that this order of things will prevail until the end of the season. So there is nothing in the immediate future to check the great activity which set in three months ago. Locally as well as throughout the country the demand for cement this year has been greater than any previous year owing in great part to the astonishing extent to which cement has been used in the farm districts, in building barns, floors, walks, water troughs, bridges, etc., constructed of concrete, and astonishingly large as this use has been this year it is believed that the demand for cement from these farm districts next year will be much greater. Prices are still low, but firm and steady.

B. F. Affleck, general sales agent of the Universal Portland Cement Co., spoke of the local conditions in the cement trade as very good. The demand this month is decidedly greater than the corresponding month of last year and all the indications point to a record-breaking year by the end of this season. Speaking of the possibility of delays in shipments on account of a shortage of cars, he believed there was little to fear. Thus far the railroads have given them all the cars they needed promptly and for this reason he could see no snags ahead to prevent a most favorable closing of this year's cement trade. He spoke of the heavy increased demand for cement in the farming districts throughout the country and believed that the use of cement in these districts is today yet in its infancy.

E. A. Mollan, Chicago representative of the Sandusky Portland Cement Co., says: "The conditions existing in the cement trade this fall are in strong contrast to those early last spring and the fore part of the summer. Business then was dull, and the demand for cement slow, while prices had reached the lowest point known in years. Shortly before September, however, things began to move, activity in building circles increased and the demand for cement grew rapidly, until today it has reached a point far in excess of the same period last year. During the month of August we shipped two and one-half times more cement than we made that month. Building operations and public improvements in Chicago this year have been in excess of those of 1908 and consequently a much larger quantity of cement has been used here than was expected.

"It has been observed lately that some mills have been slow in shipping cement," said George W. DeSmet, distributer of Vulcanite and Berkshire Snowwhite Portland cement. "This condition, to me, indicates that these mills are taxed beyond their capacity to promptly supply the demand. In Chicago since the middle of August the consumption of cement has been far greater than last year during the same period, and before the close of this season, 1909, will prove a record-breaking year in the cement trade. Nor has this greater consumption been confined to this city, as the same conditions are found throughout the country."

J. U. C. McDaniel, sales and traffic manager of the Chicago Portland Cement Co., was found in a specially happy frame of mind because everything in the cement line was apparently coming his way. He said: "During this month the demand for cement has been greater and the orders we have filled have been larger by far than those of any month in the past extending over the entire period of the existence of the Chicago Portland Cement Co."

C. H. Stebbins, of the Lake Shore Sand Co., which deals heavily in sand and gravel, said: "Business with us has been very good this year and we have all we can attend to. Since September up to the present time our volume of business has greatly exceeded that of 1908. Prices are firm and the demand far greater than last year.

It was stated at the office of the Richardson Sand Co. that its business this year had been entirely satisfactory. Railroads which had bought from hand to mouth this year were making improvements of an extended character and were using much more material for these improvements than last year.

OKLAHOMA CEMENT USERS CONVENTION.

Continued from page 38C.

Two pounds of soap are dissolved in 24 gallons of water, and 3 pounds of alum is mixed with each sack of cement. The alum is mixed with the cement dry in a churn or by some other method that will effectually mix it, and then to this is added twice as much sand. This is mixed like mortar with the soap solution instead of water and then plastered on the face of the part to be waterproofed. Two coats of this solution have proven successful in the most obstinate cases. Where the plaster cannot be used a mash is made by boiling some water and adding ¾ pound of soap per gallon. To this add an alum solution prepared by dissolving ½ pound of alum to 4 gallons of water. This is applied with a brush like a lime wash. This has also proved very effective.

In regard to fence posts, blocks and other material made in forms, if the man has a little ingenuity he can contrive some form to meet his demand, though where he has a great deal of work to do it would be more profitable for him to buy machine-made forms, though it is far better, in my opinion, to have the fence posts and other things a little more solid than are made by some of the machines on the market today, and unless you intend to carry on the business the saving thus effected in material is not sufficient to pay for the machine.

Following are some of the uses in which the farmer will find it easy and profitable to employ concrete: Well curbs, tiling, tanks, cisterns, poultry houses, wind-mill foundations, block silos, hot-bed foundations, ice houses, greenhouses, residences, fountains, steps and piles.

Following this paper, a number of the members gave their experience in laying concrete work for various farmers.

The committee on amendments, which was to suggest a change of date for the meeting time, suggested that the next meeting be held at the same time as the Oklahoma Hardware Association meeting in February, and that the same exhibit hall be used, though the meetings should be held in the city rather than at the fair grounds. This suggestion was not adopted.

Mr. Newcombe moved that the convention be held during the state fair next year, and the meetings be held in the city rather than at the fair grounds. This was carried.

The Committee on Resolutions then reported.

Next came the report of the Nominating Committee, which recommended that the present officers remain in office until the next meeting of the association, as they had served only half a year. This was adopted and the reëlection followed. The officers retaining their positions are:

President—R. E. Brownell, Oklahoma City.

Treasurer—H. G. Wick, El Reno.

Secretary—D. C. Patterson, Oklahoma City.

Secretary Patterson said that the dues were not enough to carry on the work of the secretary's office, and after a discussion Mr. Newcombe moved that they be increased from $2 to $5 per year, and that an active membership be established, consisting of men engaged in concrete work. Also that an associate membership should be created, consisting of those affiliated with the industry, whose membership dues should be $1 per year. This was adopted, after which the meeting adjourned.

THE EXHIBITS.

Arrangements were made with the State Fair Association whereby the cement show was properly taken care of, a large tent being provided for the purpose on the fair grounds, in a conspicuous place. There was quite a representation of materials and material men, who exhibited their products, and in the end reported a very satisfactory business.

The Altoona Portland Cement Co., of Kansas City, had an exhibit in charge of W. S. Carter. Numerous samples of new cement and materials from which the Altoona is made, were exhibited. Mr. Carter very generously gave away paper weights and pencils to all visitors.

S. A. Hoffman exhibited the Hoffman concrete burial vault.

The Oklahoma Portland Cement Co., of Ada, had a large exhibit of concrete products in which the O. K. brand of cement was used. These consisted of numerous concrete blocks, many of which were colored with Ricketson colors, and concrete ornamental posts and balustrades. The exhibit was installed by the Harter Co., which is the selling agent in Oklahoma City for this cement, and it was in charge of H. P. Harter, assisted by Mr. Cunningham.

Blue prints and designs of brick plants which it has erected were shown by the Oklahoma and Texas Cement Brick Co. This exhibit was in charge of W. G. Kenny.

The Acers Cement Post was exhibited by the Messrs. Acers, of Oklahoma City. They demonstrated the use of this post and it received considerable favorable comment among the farmers who examined it.

The Eureka Concrete Mixer, of Lansing, Mich., as well as the Eureka mortar mixer, were demonstrated by G. R. Kelly.

The Arrowsmith Concrete Tool Co., of Arrowsmith, Ill., demonstrated the use of concrete finishing tools. This was done under the direction of W. A. Scott and J. J. Scott.

L. V. Thayer, the well known manager of the Peerless Brick Machine Co., of Minneapolis, was on the job every minute. This was one of the most interesting exhibits at the show. The obliging Mr. Thayer made bricks for the edification of the crowd while they waited, and there was never a time when there was not a crowd around the machine. Incidentally, Mr. Thayer made a number of sales, which were very pleasing to him and equally so to the buyers.

The Oklahoma City Portland Cement Co. had a space in the show. It is making preparations to build a plant at Hartshorne, Okla. President C. B. Blake spent considerable time around the show, getting a line on concrete and promoting his company.

The Waterloo Cement Machinery Co. had a No. 7 and Junior Polygon mixer, which was in operation during the show. The exhibit was in charge of C. D. Russell and H. D. Kahler. Before they left, the Junior mixer was sold to G. W. Swain, a contractor from Yukon, Okla.

Samples of their colored concrete brick, tile flooring, sections of wainscoting, etc., were shown by the New Star Manufacturing & Construction Company, of Oklahoma City. This exhibit was in charge of James Sykes and F. R. Ford.

The Advance Concrete Mixer Co., of Jackson, Mich., had a concrete mixer on display, in charge of L. A. Ferguson. The machine was sold during the show to J. N. Williamson, of Tulsa.

The Ashland Steel Range & Machine Manufacturing Co., of Ashland, Ohio, had a U. S. Standard mixer and a U. S. Standard concrete block machine, with its numerous pallets that make 500 different styles of concrete blocks. The exhibit was in charge of H. A. Bentz, who sold the complete outfit to G. W. Daniels, of Lone Wolf, Okla.

Adams Brothers, of McLoud, Okla., had a machine for making concrete tile, which they demonstrated to the visitors.

C. F. Scott, president of the Illinois Gravel Co., of Buda, Ill., demonstrated the use of their patented steel form for concrete culverts and bridges, and met with considerable success.

Mr. Birn had charge of the exhibit made by the Joliet Concrete Machine Co., of Joliet, Ill. This consisted of a block machine.

E. O. Parsons, of Oklahoma City, had a concrete exhibit consisting of posts, fences and burial vaults, as well as urns of concrete.

The Kramer Automatic Tamper, Peoria, Ill., was demonstrated by G. W. Kramer and W. H. Janssen. This machine was sold to Potter & Lemond, of Amarillo, Texas.

W. B. Simpler represented the Hayden Automatic Block Co., of Columbus, Ohio. He had a number of block machines and post molds, as well as samples of concrete made in the Hayden machine. This exhibit was with that of the Oklahoma Concrete Machinery Co., who are the agents for this machine in the southwest territory. E. A. Mossman, is manager for the company.

E. E. Orr, of Wichita, Kan., gave a demonstration of the use of his patented concrete fence post. The form for this casts sixteen posts at a time.

C. P. Diamond and J. B. Foote, of Chicago, demonstrated the line of block machines manufactured by the Diamond Concrete Machinery Co.

What a Chicago Man Says.

H. A. Follette, Western manager for the Cortright Metal Roofing Co., reports a brisk business, especially in the South and Southwest. "There is no question," says Mr. Follette, "but that trade conditions show a marked improvement, and are getting better right along. The reason for this improvement being particularly noticeable in the South and Southwest is that new bonding laws have given the various communities an opportunity to raise funds, and these are being liberally used in the erection of schools and other public buildings. Concrete construction in these sections is assuming vast proportions."

Mills Clogged With Orders.

A. A. Clement, of the American System Reinforcement Co., says business is very perceptibly on the mend. Builders are operating on a larger scale than they did a year ago, and many of the improvements in hand and contemplated are really of a mammoth nature.

"We find our best field," he added, "in the Central West, the South and Southwest. Freight rates bar us as a rule from the East, although we are now doing a big job in New York state. Our main trouble is in getting material, the Pittsburgh mills being clogged with orders. This is a serious handicap, as it frequently entails a delay of from five to six weeks."

Side Talk

Will Receive Bids For Cistern.

Wm. M. Smith, acting chief, Bureau of Yards and Docks, Navy Department, Washington, D. C., will receive bids until November 6 for a concrete cistern at the U. S. naval station, Key West, Fla.; plans and specifications can be obtained on application to bureau or to commandant of navy yard; proposals must be endorsed "Proposals for Concrete Cistern."

Willis Shaw Machinery Co. Incorporates.

While the Willis Shaw Machinery Co. has been recently incorporated, succeeding the Willis Shaw Co., the old offices have been retained and Mr. Shaw's many friends will still be welcomed at room 400, No. 171 La Salle street. The new company has a big lot of new and used machinery for sale, for immediate shipment. Bargains can be obtained by all in need of hoisting engines, cableways, locomotive cranes, steam shovels, dredges and excavators, clams and orange peels, concrete mixers, stone crushers (jaw and gyratory), road rollers, steam engines, etc., by writing to the Willis Shaw Machinery Co., Chicago.

Wisconsin Lime & Cement Co.'s Specialties.

Londelius pin anchors are under the exclusive control of the Wisconsin Lime & Cement Co., Chamber of Commerce building, Chicago. These anchors are of the highest quality and simplest construction and low in price. This latter feature is so attractive that we are assured the demand has been something phenomenal from the day the device was first put on the market. As the Wisconsin Lime & Cement Co. expresses it, "this anchor is a boon for which masons everywhere have prayed for years."

The Ideal wall tie, made from expanded metal, is also controlled by this company. It states that this tie holds stronger than any other; that it cannot be torn away; that it is easily adjusted to any angle, and that all that is necessary to make a solid wall is to mortar in and around the meshes.

Many of the readers of this paper may not know that the makers of Amatite roofing distribute free samples for the information of prospective purchasers.

Some of our readers have probably doubted that a roofing could be made which would need no painting, and the sample of Amatite is convincing evidence that a practical mineral surface has been invented.

Sending for the free sample does not entail any obligations and there is no charge—not even for postage. With the sample is sent a little book telling all about Amatite and showing pictures of roofs in all parts of the country where Amatite has given protection without painting for many years.

Just drop a postal card to the nearest office of the Barrett Manufacturing Company, New York, Chicago, Philadelphia, Boston, St. Louis, Cleveland, Pittsburg, Cincinnati, Minneapolis, Kansas City or New Orleans.

"Things Worth Knowing About Concrete," is the title of a series of leaflets being sent out by the Vulcanite Portland Cement Co., Land Title Bldg., Philadelphia, Pa. No. 1 gives an "Attractive Surface Finish for Concrete," by Albert Moyer, Assoc. Am. Soc. C. E., and No. 2 gives "Bonding New Concrete to Old," by the same author. A file of these will be of interest to all concerned in concrete construction.

The little booklet of the Marblehead Lime Co., of Chicago and Kansas City, entitled "Hydrated High Calcium Lime in Portland Cement Mixtures" has become a classic in trade literature. It has in a few pages a whole lot of hammered-out practical facts for the man who uses his head as well as his hands when he works. The company will be glad to furnish every reader of ROCK PRODUCTS with a copy, and it is well worth the asking.

The Davenport Locomotive Works, Davenport, Ia., have just issued an interesting wall map showing a sectional view of their industrial locomotive. The map will be sent to any interested parties on request.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion .....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line.
Heading counts as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copies of paper containing the advertisement.

EMPLOYEES WANTED

WANTED.

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

EXPERIENCED MAN

for superintendent of crushing plant.

Address
B 723, care of ROCK PRODUCTS.

SUPERINTENDENT WANTED.

Experienced man for superintendent of crushing plant. Would like man with knowledge of lime burning. Steady position. Address WALTON STONE COMPANY, Jacksonville, Ill.

SALESMAN

wanted to handle, as a side line on a commission basis, a building specialty of national reputation. Only those need answer who call regularly on dealers in building materials, concrete or building contractors, architects and engineers. Address
SPECIALTY, care of ROCK PRODUCTS.

SUPERINTENDENT WANTED

On March 1, 1910, superintended wanted for lime and crusher plant. Wood fuel. Must be experienced in quarrying and burning lime. Strictly temperate. State reference and salary. Address B 721, care of ROCK PRODUCTS.

EMPLOYMENT WANTED

AS SALES MANAGER

or assistant sales manager for cement plant. Have had six years' experience in cement business. At present employed but desire change.
Address B 722, care of ROCK PRODUCTS.

DESIRE A CHANGE.

At present employed. Would like position as sales manager or assistant sales manager for cement plant.
Address
B 724, care of ROCK PRODUCTS.

EXPERIENCED SALES MANAGER WANTS CONNECTION.

Married man, 30 years of age, acquainted with dealers in eastern states, desires position as sales manager. Cement preferred. Best of references given as to capability and honesty.
Address B 725, care of ROCK PRODUCTS.

MACHINERY FOR SALE

CRUSHER FOR SALE.

Gates No. 4 Gyratory, in fine condition. Cheap.
R. P., BOX 2, Sta. A., Cincinnati, O.

FOR SALE.

Allis-Chalmers Portable No. 1, style D Gates crusher, with 25-h.-p. F. & M. gasoline engine, all shafting, pulleys, belting, pipe fittings; painted and erected on 40,000-pound flat car.
Address
BOX 713, care of ROCK PRODUCTS.

HOW ABOUT THESE?

Gates No. 5 Style "D" Crusher, rear drive, standard chilled head and concaves, rebabbitted and in fine order, together with 36' Elevator and 42"x12' Screen and Dust Jacket.
Gates No. 3 Style "D" Crusher, rear drive.
Lidgerwood No. 72 Hoist, 8¼x10" D. C. D. D. with boiler.
Buffalo 7¼x10¾" D. C. D. D. with boiler and boom swinger.
Mundy 7¼"x10" D. C. D. D. with boiler and Sudler boom swinger.
Flory No. 13 Hoist, 7"x10" D. C. D. D. with boiler.
American No. 26 Hoist, 6¼x10" D. C. D. D. with boiler (2).
Byers 6"x7" D. C. D. D. with boiler (both friction and links).
Smith No. 2½ Mixer, mounted, with engine and boiler.
Chicago No. 2 Mixer, mounted, with engine and boiler.
Koehring No. 2 Mixer, mounted, with engine and boiler.
Smith No. 2 Mixer, mounted, with engine and boiler.
Worthington Pump, Duplex, 12"x7"x10".
Knowles Pump, Duplex, 16"x10½"x12".
Laidlaw-Dunn-Gordon Duplex Compound, 14x20x10x18.
32-ton standard gauge 4-wheel Switcher and Tender; a good one.
15-ton Loco., Crane, 45' boom; handles Clamshell (near new).
15-ton wide gauge Whirlie, 45' boom, 1½-yard Clam (A1).
Norwalk tandem compound Compressor; 960' to 100 lbs. pressure.
Blaisdell cross compound Duplex Compressor, 519' to 100 lbs.
Rand Compressor, straight line, 12"x12"x16", capy. 265'.
We have attractive offerings in Bucyrus, Marion and Vulcan Steam Shovels, Dinkies, Cars, Rock Drills, Wheeled Scrapers, Road Rollers, Clams and Orange Peels, etc.
Send for our printed stock sheet and price list.
We buy good equipment; what have you?
Address WILLIS SHAW MACHINERY CO., 171 La Salle St., Chicago, Ill.

FOR SALE CHEAP.

One first-class automatic block machine, one concrete batch mixer, one dray. Write to
E. E. JACKSON, 405 Jackson St., Fremont, Ohio.

ENGINES AND BOILERS FOR SALE.

Engines—Corliss, Automatic and Throttling, all sizes from 1 to 500 H. P.
Boilers—Horizontal, Portable and Vertical, all sizes from 1 to 200 H. P.
Pumps, Heaters, Tanks, Sawmill and General Machinery.
Write for our prices on your requirements.
THE RANDLE MACHINE CO.,
1745 Powers St., Cincinnati, O.

FOR SALE.

One Allis-Chalmers portable No. 1 Style D Gates crusher, with 25 H. P. Fairbanks & Morse gasoline engine, all belting, shafting, pulleys, circulating tanks, pipe fittings; painted and erected on 40,000-pound flat car. Present location, Leesport, Pa. For further information address COMMONWEALTH ROOFING CO., 17 Battery Place, New York, or Warren-Ehret Company, Land Title Building, Philadelphia, Pa.

GRAVEL EXCAVATORS.

We make a specialty of Sand and Gravel Excavating Plants, both New and Second Hand, either with Drag-line bucket, Clamshell or Orange Peel. We furnish necessary equipment or will install complete—as desired. Confer with us. WILLIS SHAW MACHINERY CO.,
171 La Salle St., Chicago, Ill.

FOR SALE.

One Broughton Plaster Mixer with charge hopper and bagging hopper.
One Day Plaster Mixer with charge hopper.
One Broughton Direct Discharge Mixer.
These machines are all in good repair and for sale at bargain prices. Address
THE FORRESTER PLASTER CO., Cleveland, Ohio.

BUSINESS OPPORTUNITIES

LIME AND STONE WORKS FOR SALE.

Plant located in Georgia. Has been in continuous operation over forty years. An inexhaustible mountain of finest Dolomite limestone. Capacity, 450 barrels lime daily. Rock crushing plant, modern and new. Capacity, eight cars daily. Address
W. M. HARDY, Rome, Ga.

Whenever you wish to
Sell your Stock, to
Dispose of your Old Machinery,
Wish an Employee,
or Want a Position, remember
ROCK PRODUCTS can do this for you
promptly.

BOOKS FOR THE TRADE

Architects and Engineers

Practical Reinforced Concrete
H. B. Andrews. Price $2.00.

Analysis of Elastic Arches of Steel, Masonry and Reinforced Concrete
Joseph W. Balet. Price $3.00.

Theory of Steel-Concrete Arches and Vaulted Structures
Wm. Cain. Price $0.50.

Concrete Country Residences
Price $1.00.

Graphical Handbook for Reinforced Concrete Design
John Hawkesworth, C. E. Price $2.50.

Architects' and Engineers' Handbook of Reinforced Concrete Construction
L. J. Mensch. Price $2.00.

Concrete and Reinforced Concrete Construction
Homer A. Reid. Price $5.00.

Theory and Design of Reinforced Concrete Arches
Arvid Reuterdahl. Price $2.00.

Treatise on Concrete, Plain and Reinforced.
F. W. Taylor and S. E. Thompson. Price $5.00.

Concrete Engineers' and Contractors' Pocketbook
Wm. F. Tubesing. Price $1.00.

Principles of Reinforced Concrete Construction
F. E. Turneaure and E. R. Maurer. Price $3.00.

Concrete Steel
W. N. Twelvetrees. Price $1.90.

Handbook on Reinforced Concrete
F. D. Warren. Price $2.50.

General Specifications for Concrete Work as Applied to Building Construction
Wilbur J. Watson. Price $0.50.

American Engineering Practice in the Construction of Rotary Portland Cement Plants
B. B. Lathbury and C. Spackman. Price $2.00.

Cement and Lime Manufacturers

Manufacturer of Hydraulic Cement
A. V. Bleininger. Price $1.25.

Limes, Cements and Mortars, Concretes, Mastics, etc.
G. R. Burnell. Price $0.60.

Portland Cement; Its manufacture, testing and use
David B. Butler. Price $5.00

Instructions to Inspectors on Reinforced Concrete Construction
Geo P. Carver. Price $0.50.

Lime, Mortar and Cement
A. L. Dibbin. Price $2.00.

Cements, Limes and Plasters
Edwin C. Eckel. Price $6.00.

Practical Treatise on Limes Hydraulic Cements and Mortars
Gen. Q. A. Gillmore. Price $4.00.

Mortars, Plasters, Stuccos Concretes, Portland Cements and Compositions
F. Hodgson. Price $1.50.

Experimental Researches upon the Constitution of Hydraulic Mortars.
H. LeChatelier. Price $2.00.

Concrete Factories
Robert W. Lesley. Price $1.00.

Portland Cement; Composition
Richard K. Meade. Price $3.50.

The Constitution of Hydraulic Cements
S. B. Newberry. Price $0.50.

Manufacture of Concrete Blocks
Wm. M. Torrance and others. Price $1.50.

Practical Cement Testing
W. Purves Taylor. Price $3.00.

Notes on the Testing and Use of Hydraulic Cement
Fred P. Sutcliffe. Price $1.00

Calcareous Cements
G. R. Redgrave and Charles Speckman.

"Portland Cement from a Financial Standpoint"
By Edwin C. Eckel C. E. Price $2.00.

"Plastering—Plain and Decorative"
By Millar. Price $7.50.

Cement Users

Foundation and Concrete Works
E. Dobson. Price $0.60.

The Uses of Hydraulic Cement
Frank Harvey Eno. Price $1.00.

Portland Cement for Users
Henry Faija and D. B. Butler. Price $1.20.

Cements, Mortars and Concrete
Myron C. Falk. Price $2.50.

Reinforced Concrete
W. H. Gibson and W. L. Webb Price 1.00.

Concrete System
F. B Gilbreth. Price $5.00

Hand Book of Cost, Data
Halbert P. Gillette. Price $4 00.

Concrete Construction
H. P. Gillette and C. S. Hill. Price $5.00.

Cement Workers' and Plasterers' Ready Reference
H. G. Richey. Price $1.50.

Notes on Testing and Use of Hydraulic Cement
Fred P. Spalding. Price $2.00.

Reinforced Concrete
A. W. Buel and C. S. Hill. Price $5.00.

Concrete
Edward Godfrey. Price $2.50.

Reinforced Concrete
C. F. Marsh and Wm. Dunn. Price $7.00

Practical Treatise on Foundations
W. Patton. Price $5.00.

Concrete
Thomas Potter. Price $3.00.

Cement and Concrete
Louis C. Sabin. Price $5.00.

ROCK PRODUCTS, 355 Dearborn Street, CHICAGO

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Power & Mining Mchy. Co.

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Gandy Belting Co.
Main Belting Co.

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Harbison-Walker Refractories Co.

BUCKETS, DUMPING AND GRAB.
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Springfield Coal & Ice Co.
Wisconsin Lime & Cement Co.
Woodville Lime & Cement Co.

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Peerless Brick Machine Co.

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Woodville Lime & Cement Co.

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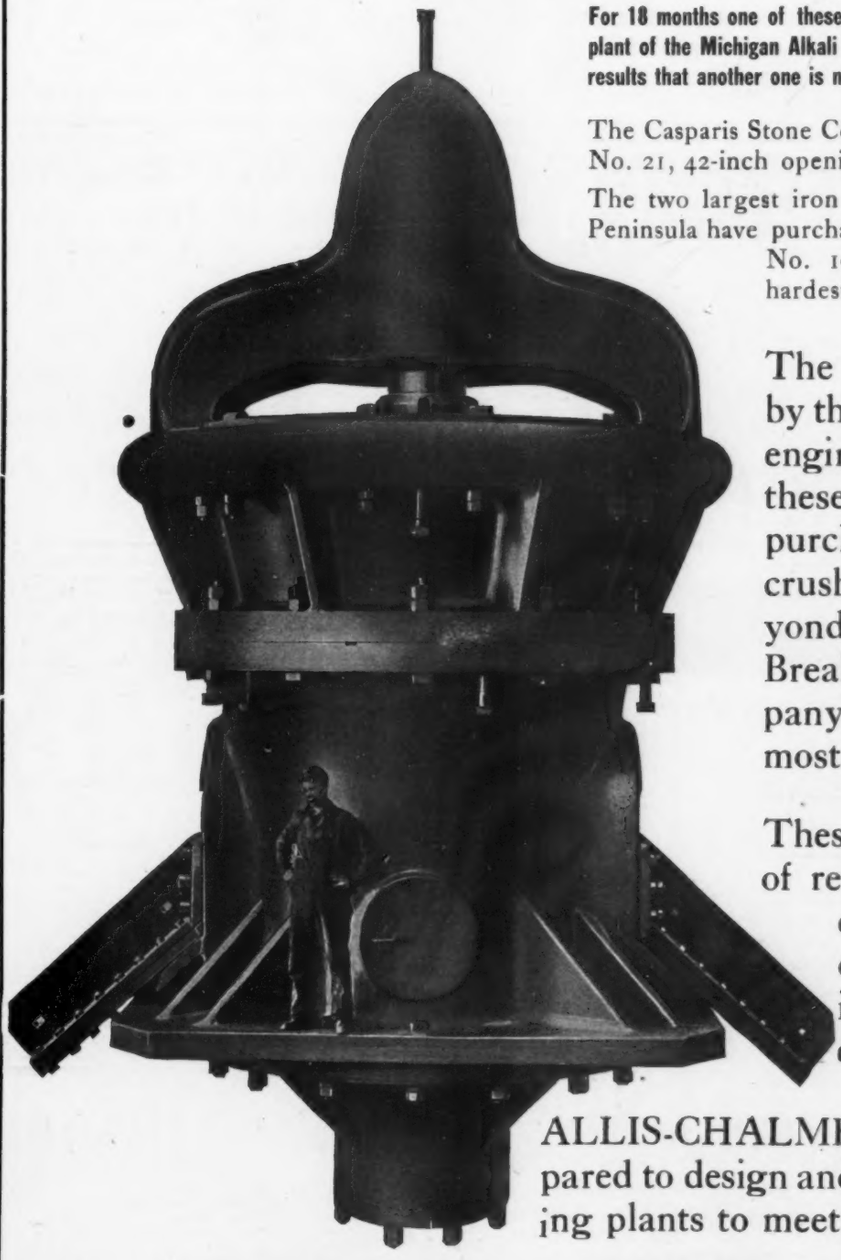
Maumee Chemical Co.
Sanitary Construction & Mfg. Co.
Wadsworth, Howland & Co., Inc.

Another No. 18 Breaker

With a Receiving Opening of 36 Inches
FOR THE MICHIGAN ALKALI COMPANY.



For 18 months one of these Gigantic Breakers has been in operation at the plant of the Michigan Alkali Company, Alpena, Michigan, with such satisfactory results that another one is now in course of erection.

The Casparis Stone Company has just purchased two machines No. 21, 42-inch opening, guaranteed for crushing trap rock.

The two largest iron mining companies on the Scandinavian Peninsula have purchased crushers No. 18, 36-inch opening; No. 10, 24-inch opening, for crushing the hardest kind of iron ore.

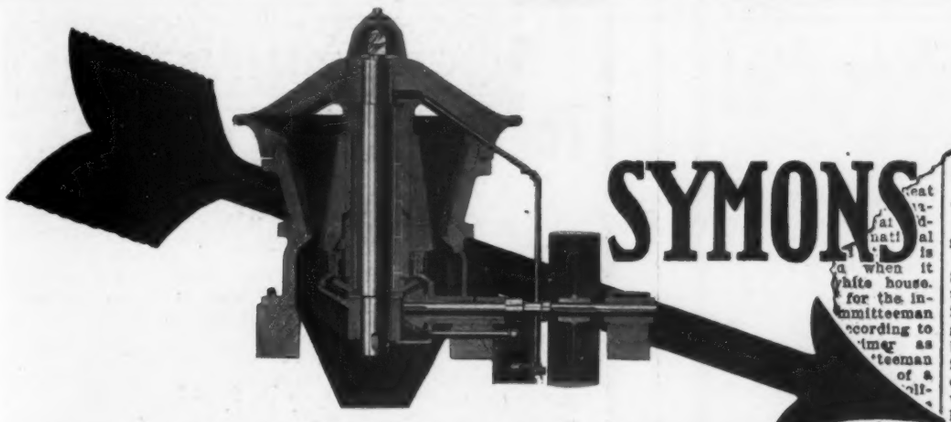
The selection of these machines by the thorough and well-trained engineers sent to America by these large foreign interests to purchase the very latest and best crushing machinery, proves beyond doubt that the Gates Breakers of Allis-Chalmers Company have maintained the foremost position always held by them.

These huge machines are capable of receiving pieces as large as can be economically handled, thereby saving drilling and blasting and entirely eliminating hand sledging.

ALLIS-CHALMERS COMPANY is prepared to design and equip complete rock crushing plants to meet every condition of service.

ALLIS-CHALMERS COMPANY

General Offices, - - MILWAUKEE, WISCONSIN.



SYMONS CRUSHER

BIG CONTRACT FOR CHICAGO MEN

To Provide Stone-Crushing Machinery for British Naval Base.

SPECIAL CABLE TO THE DAILY NEWS.

London, England, Aug. 2.—The T. L. Smith company of Chicago has obtained the contract for supplying the stone-crushing machinery to be used by the British government in constructing the great naval base at Rosyth. This is one of the most important victories scored by American enterprise in England. The Chicago firm will proceed immediately to install the six huge crushers required to break up the stone for making 1,000,000 cubic yards of concrete.

Rosyth harbor will take seven years to build and will cost £3,500,000 ($17,500,000). It will consist of a graving pier capable of taking the largest ships in the navy and of a big basin and quays accommodating twenty-two warships. Ultimately double banks will be provided, making room for forty-four warships, with powerful land defenses.

Chicago Daily News
August 2, 1909.

Write for Catalogue No. 166.

THE T. L. SMITH CO.

301 OLD COLONY BUILDING,

CHICAGO, ILL.

Style No. 1, 7x8 Jaw Opening, 4 Horse-power.

Who Crushes Your Rock?

We want to know, because we think we can save you money by introducing our crusher in your locality. This cut shows an actual photograph of our No. 1 Crusher—one of our small ones—with samples of rock crushed to eight different sizes. You must remember that this crusher is not an experiment, but it is remarkable to know that this adjustment can be made instantaneously. We manufacture twenty different sized crushers, all described in our new **No. 5. Catalogue**. Would you like to have one of these sent to your address?

Eureka Stone and Ore Crusher Co.
Cedar Rapids, Iowa

AUSTIN GYRATORY CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

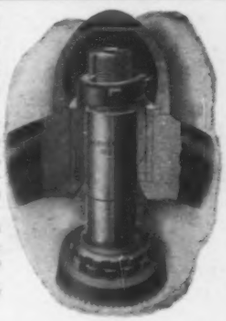
Plans and specifications furnished for any sized plant.

Send for Catalogue No. 17.

All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

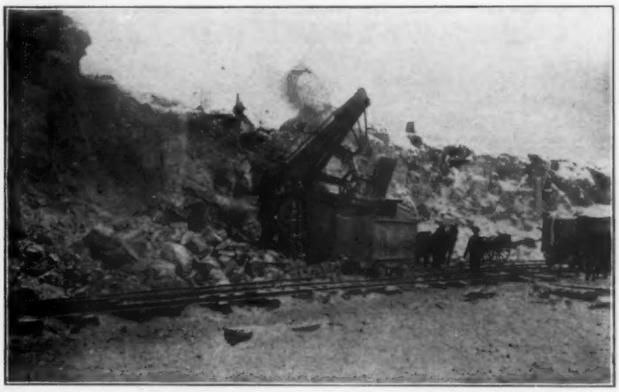
A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.



Austin Manufacturing Co., Chicago,

New York City Office
1682 FULTON BUILDING
Hudson Terminal



"Little Giant loading rock, S. B. Martin & Co., Fiborn Quarry, Mich."

The Earning Power of a Steam Shovel for Quarry Work

depends upon its ability to keep the rock moving day in and day out. To do this, it must be correctly designed and built of only the best materials; every part must have sufficient strength to stand the strains of the most severe work.

Vulcan Steam Shovels

fill all the requirements for this class of work, because they are correctly designed and built of only the very best materials obtainable. Our thirty years' experience in the manufacture of this class of machinery together with a careful study of conditions and requirements enables us to bring out all the desirable features in steam shovel construction, so that when you buy a **VULCAN** you are assured of getting the very best on the market. Full information, prices, specifications, etc., sent on request.

GIANT BOOM SHOVELS
6 sizes, 1½ to 5 cu. yd. dippers

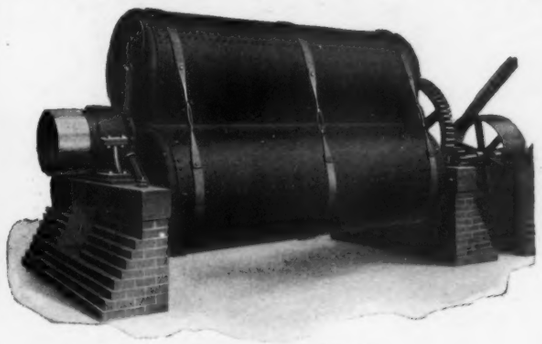
LITTLE GIANT SHOVELS
2 sizes, 1½ cu. yd. dippers

REVOLVING SHOVELS
3 sizes, ¾ to 1½ cu. yd. dippers

SEND TODAY FOR BOOKLETS

THE VULCAN STEAM SHOVEL COMPANY
129 Vulcan Place, TOLEDO, OHIO

Attention Cement Mills



Multiple Tube Mill

10 Tube Mills, 5′x22′ consume at least	600 H.P.
10 Multiple Tube Mills, with the same capacity will consume	300 H.P.
Saving	300 H.P.

Supposing you have to borrow the money to make the change,

10 Multiple Tube Mills cost	$12,000.00
Interest at 6%	720.00
Installing the mills	2,280.00
	$15,000.00

Lowest cost per H.P. per year $40.00. 40×300 = $12,000.00. So that a loan of $15,000.00 will give a continuous income of $12,000.00 per year. **Who wants it? Apply to**

J. R. Alsing Engineering Co.
136 Liberty St., New York, U. S. A.

95-C IN SANDUSKY PORTLAND CEMENT COMPANY'S QUARRY.

Bucyrus Shovels Are Loading Crushed Stone and Digging Blasted or Unblasted Cement Rock in the Leading Quarries in the United States.

THE BUCYRUS CO.

Branch Offices:
NEW YORK
SAN FRANCISCO

Main Office & Works:
South Milwaukee, Wis.

Hard Service

brings out the superior wearing quality of Nuttall Cut or planed gears; one of their strong points. If you have a hard proposition let us hear from you.

Nuttall—Pittsburg

When in a hurry, wire us.

THE FULLER ENGINEERING CO.

DESIGNING, CONSTRUCTING AND OPERATING ENGINEERS, ANALYTICAL CHEMISTS

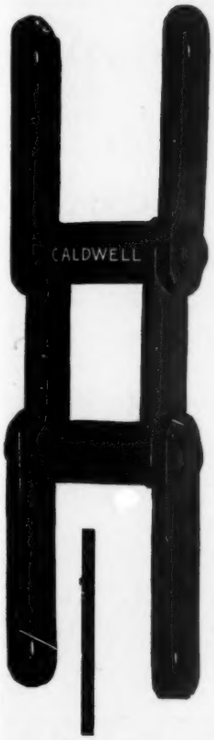
CEMENT MILLS A SPECIALTY

OFFICES: ALLENTOWN NAT. BANK BLDG. ALLENTOWN, PA.

MACHINERY

—FOR—

Industrial Plants



We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material.

Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

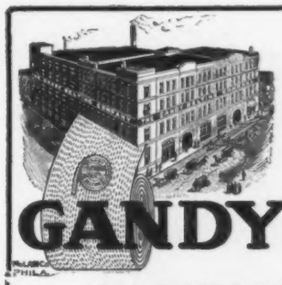
When you are in need of anything in our line, try us.

Catalog No. 34

H. W. Caldwell & Son Co.

17th St. and Western Ave., Chicago

Fulton Bldg., Hudson Terminal, No. 50 Church St.
NEW YORK CITY



THE

Gandy Belting Co.

of **Baltimore, Md.**, has **the largest factory in the world** devoted exclusively to the manufacture of

COTTON DUCK BELTING

for elevating, conveying and all power transmission purposes.

Our exceptional facilities enable us to turn out belts that are ¼ the cost of leather and 25 per cent cheaper than rubber.

And mind you—in spite of this difference

Gandy Red Stitched Cotton Duck Belts

will outlast either and give better service. Send for booklet, "Experiences with Gandy." It tells all about them and also tells about our wonderful Gandy Belt Dressing.

The Gandy Belting Co., Baltimore, Md.

New York Branch: 88-90 Reade St.

Wade Iron Sanitary Mfg. Co.

MANUFACTURER OF

Wade Back Water Gate Valves, Clean-Out House Drainage Fittings, Iron Catch Basins and Cast Iron Covers, Etc. Send for Catalogue.

Long Distance Phone, Harrison 6713.

43 E. Harrison Street, CHICAGO, ILLS.

CLINTON METALLIC PAINT CO.

CLINTON, N. Y.

LARGEST AND OLDEST MANUFACTURERS OF

BRICK AND MORTAR COLORING

Be sure you get the genuine with the "Little Yellow Side-Label" on each package.

Let us tell you about Side-Walk Black.

Osborne Crushing Plant of the Springfield Coal & Ice Co.

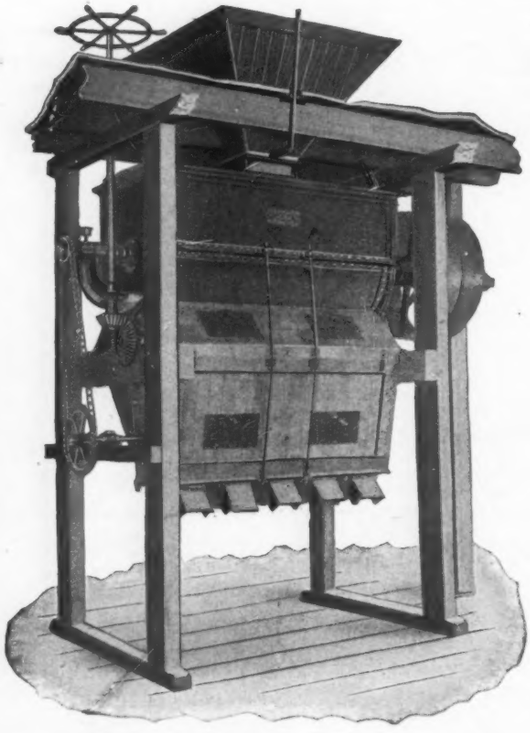
We are prepared to ship crushed limestone from ⅞ to 3½ inches on short notice.

On account of the high percentage (96 to 98%) carbonate of calcium, this material is especially suited for fluxing.

Excellent Shipping Facilities and Prompt Service.

The Springfield Coal & Ice Co.

SPRINGFIELD, O.



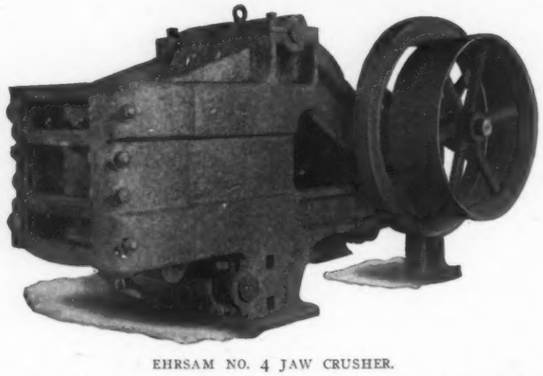
ENTERPRISE PLASTER MIXER

NOISELESS,
DURABLE and EFFICIENT.

For Mixing Hair Fibre, Wood Fibre and Retarder with Dry Plastering Materials.

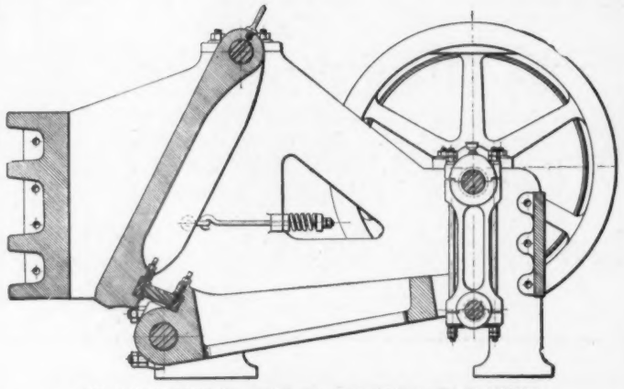
Calcining Kettles

Jaw and Rotary Crushers for Gypsum, Reels, Vibratory Screens, Hair Pickers and Transmission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons of Gypsum per hour to 2½-inch maximum or smaller if wanted.



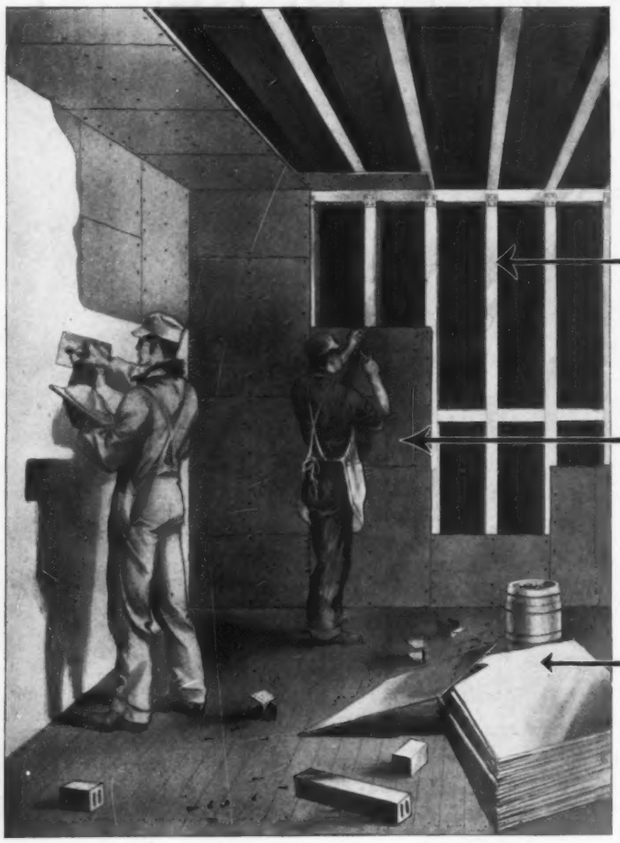
NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER.
The jaw opening at inlet is 18x28 inches.

The J. B. Ehrsam & Sons Mfg. Co.,

BUILDERS OF

COMPLETE EQUIPMENTS FOR PLASTER MILLS

Enterprise, Kansas



"Show Me!"

That's

Gypsinite

instead of Wood Studding

That's

Plaster Board

Better and Quicker than Lath

That's

A Small Compact Pile

Easy to Handle—Easy to Work With

Isn't It Better?

Isn't it better for a builder to **fireproof** his building instead of **merely lathing** it? Especially when he can do it so much quicker and at no greater cost than lathing, and **get a better plastering job at less cost** at the same time?

Isn't it better for him to save time in building by nailing on a few Plaster Boards instead of a "legion of lath"?

If it is better—which it certainly is—and if **the building public knows** of these advantages—which it certainly does—then,

Isn't it better for you, as a Material Dealer, to handle and push

The Gypsinite-Plaster Board System of Fireproofing

in preference to troublesome lath? Our Plaster Board is Fireproof, and is a great Time, Labor and Plaster saver in building. Combined with our Fireproof Gypsinite, it affords the **lightest, strongest, most efficient, most economical fireproofing system known for general building purposes.**

Strong Selling Features these; and considered in connection with the Uniform Prices, Uniform Profits, Uniform Quality and Uniformly Certain and Prompt Shipments—well?

Isn't it better to inquire than to miss a good thing? For Information, Quotations, Literature, address our nearest office.

United States Gypsum Co.

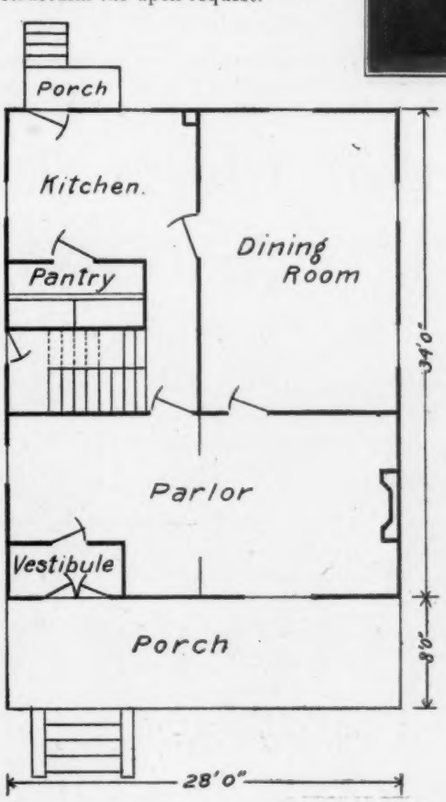
Cleveland Chicago New York Minneapolis San Francisco

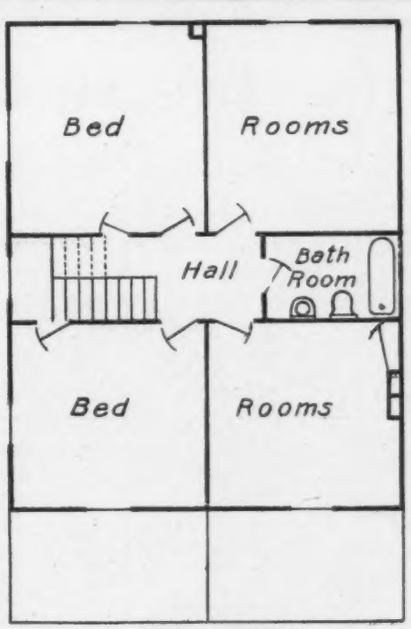
Low Cost Concrete Homes

The greatest obstacles to the use of concrete in small residence construction are: 1. The expense of form work and contractor's plant in reinforced concrete (monolithic) construction, and 2. The unsatisfactory appearance and poor waterproof qualities of concrete blocks made by the dry-tamp process. Both these obstacles have been overcome by

The Pauly Concrete Hollow Tile.

Full particulars with regard to the equipment of a suitable factory with the necessary machinery for any location will be cheerfully given, and a conservative and profitable deal will be exhibited for prospective manufacturers of concrete structural tile upon request.





Frank M. Ray's Residence
Youngstown, Ohio.

This residence is fireproof and waterproof. It was built in Youngstown, Ohio, fall of 1908, upon the following contract specifications:

Masonry work complete, including selling price of tile, concrete floor extending under entire basement and combination tile and reinforced concrete floors	$ 950.00
Excavation of cellar and construction of walks, steps, etc., outside of building proper	125.00
Lumber, hardwood lumber finish for interior and glass (including built-in furniture and plate glass mirrors)	1,000.00
Carpenter work	700.00
Slate roof and spouting	200.00
Plumbing in kitchen, bathroom and basement	250.00
Painting (exterior and interior)	125.00
Furnace and piping	150.00
Total plastering (including material)	200.00
	$3,700.00
Plus 10% profit	370.00
Total contract price	$4,070.00

The walks, driveway and steps, as well as the porch columns, are of concrete. It is sumptuously finished inside with hardwood, plate glass windows and doors with slate roof and six massive pieces of built-in furniture of elegant design, with plate mirrors, etc., all included in the figure named.

☞There is a good business opportunity in building homes of this type in any city. We furnish the entire machinery outfit upon the basis of a case.

Send for booklet showing a large number of houses built with this material.

CONCRETE STONE & SAND CO., Youngstown, O.

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